ATLANTIC FISHERMAN

AUGUST
1951

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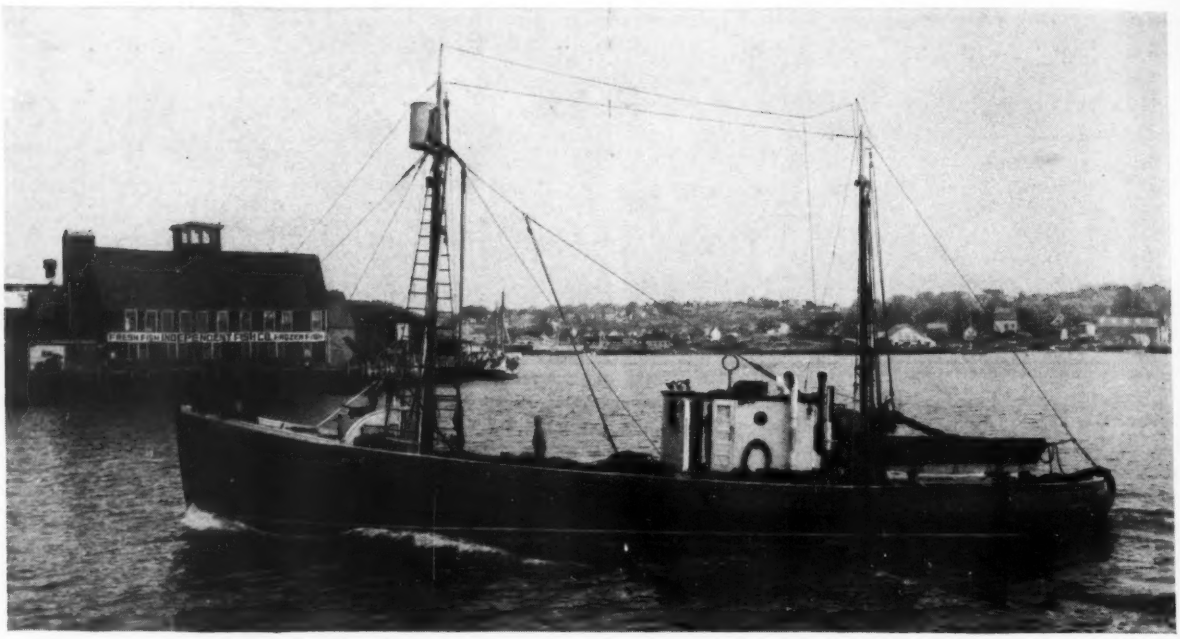

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2. **Does not form harmful deposits in tanks, filters, and injectors**
3. **Clean burning**
4. **High volatility**
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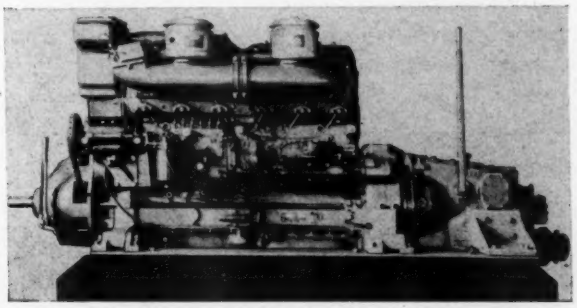

Lathrop DH-200 Diesel, rated 187 hp. at 1600 rpm.

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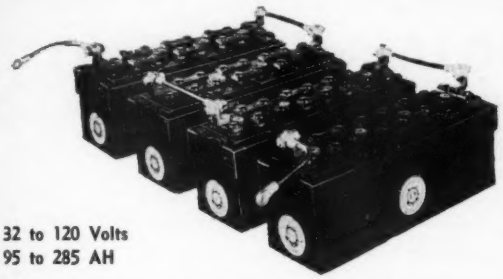

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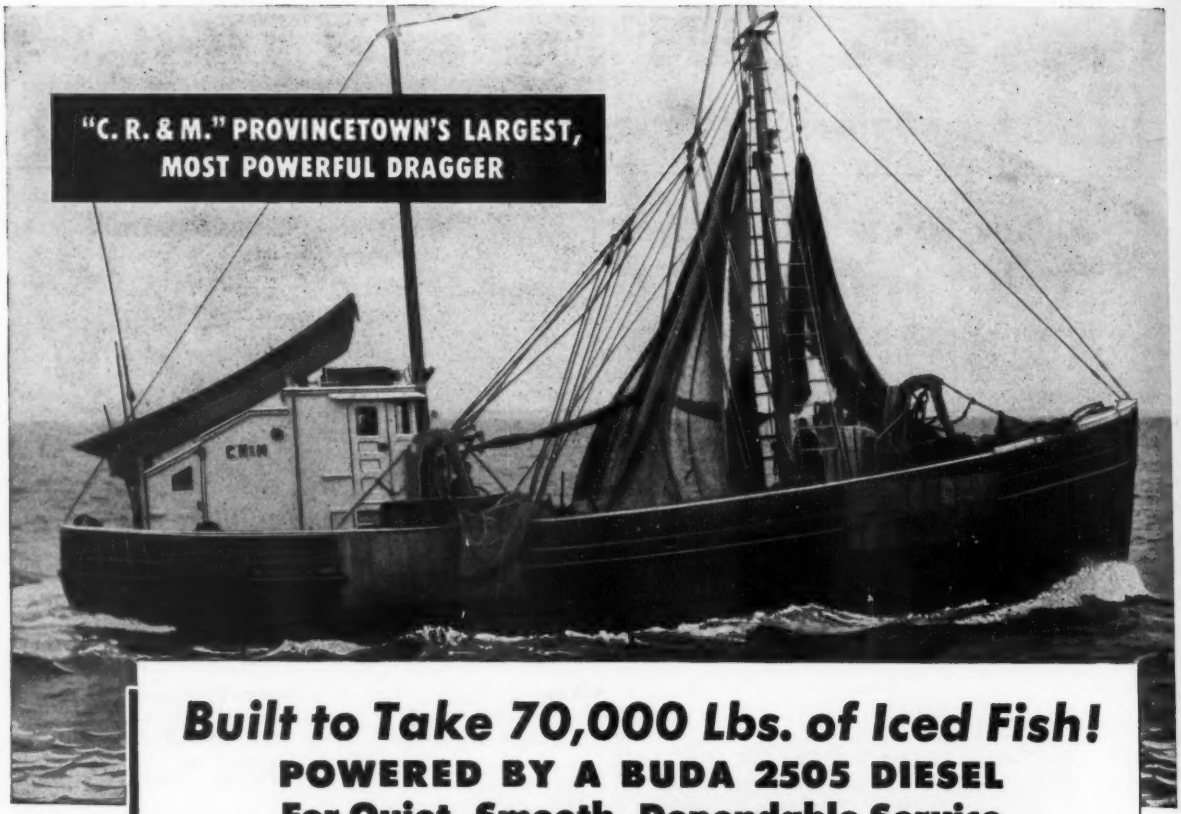

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The Buda 8 DCMR-2505 Marine Diesel in Capt. Ferdinand Salvador's powerful new Dragger, the "C.R.&M." is a *heavy duty* marine Diesel that will deliver quiet, smooth, reliable service for many years.

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BUDA

BM-10

Anglers Need Better Understanding of Commercial Fishing

Sports fishermen often have been at odds with commercial fishermen. Sometimes their grievances have been justified, but at other times the selfish interests of the sportsmen and their lack of understanding of commercial fishing have blinded them to the point of unreasonableness.

For example, sports fishermen in certain States periodically have asked for added restrictions on commercial menhaden fishing, claiming that many edible fish are taken in purse nets or seines used by the porgie boats. However, Dr. James N. Gowanloch, chief biologist of the Louisiana Department of Wildlife & Fisheries, has stated that menhaden fishing operations, properly conducted, can cause no damage to game and other commercial fish. Gowanloch cited research which he said showed that among 2,500,000 menhaden caught in a particular area, only 228 game and commercial fish were captured.

Recently on Long Island, agitation developed for an effort to eliminate or restrict commercial net fishing in Peconic Bays. An appeal was made for sportsmen to send letters to the Governor. It was stated that 248,000 lbs. of weakfish were taken from this section last year, before the sportsmen had a chance to catch one.

Saltwater anglers and commercial fishermen of necessity are partners in a common enterprise, and must work together, if they are to attain their common goal. The following material, published by the Salt Water Sportsman, is a timely analysis of the sport versus commercial fishing question, which should help to bring about better harmony between the two groups.

"Twenty-two billion pounds of food cannot be ignored in a world that is constantly seeking new supplies to feed hungry millions. Sport fishermen rarely consider fish from the commercial viewpoint—that is, in pounds which are sold at a definite sum—but they would do well to consider that figure of 22,000,000,000.

"Dr. R. V. Truitt, director of the Chesapeake Biological Laboratory, Department of Research and Education, Solomons, Maryland, mentioned that startling total as the amount of food taken each year from the waters of the world—and he did not include any minor food species. 'Pound for pound,' he remarked at a seminar held for biologists at the laboratory, 'this would equal the weight of 7,300,000,000 broiling size chickens—or the equivalent of a herd of steers some 37,000,000 in number.'

"United States and Alaska produce about 4,400,000,000 pounds of that total. This means that fish and shellfish are coming in at the amazing rate of about 140 pounds a second every hour of every day of the year within our own borders. That represents a lot of fish, a lot of money and a lot of work.

"For years we have emphasized the fact that commercial fishermen are not all devils with horns. They are, for the most part, decent people making their living from the sea. They are supplying food to millions and will continue to supply this food to the best of their ability. Sportsmen who condemn all commercial fishing and fishermen would do well to remember that 22,000,000,000 pounds of food cannot be shrugged off as though it were nothing.

"There is little question that some of the commercial fishermen have been foolish about conservation of the natural resources of the ocean. There is little doubt either that some sport fishermen, so called, have been equally foolish. Instead of trying to talk things over reasonably with the commercial men, they have raved and ranted without reason or facts on their side. Half truths, downright misstatements of facts and hysterical reporting have done much to widen the breach between the commercial and sport groups.

"We do not say and never have said that the commercial fishermen are always right. Frequently they are wrong. In every case, however, these men have been sincere in their beliefs. Reasonable discussion can often correct the beliefs and reasonable discussion often will show the sportsmen that they themselves are not as correct as they think."

ATLANTIC FISHERMAN

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The Magazine for Fish and Shellfish Producers On Atlantic Coast, Gulf of Mexico, Great Lakes

VOL. XXXII AUGUST 1951 NO. 7

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Published Monthly by Atlantic Fisherman, Inc.
Goffstown, New Hampshire

Subscription rates, per year: United States, $3.00; Canada, $4.00; Foreign, $5.00. Single copies, 35 cents.

Acceptance under section 34.64, P.L.&R., authorized at Manchester, N. H.

CCA Member: Controlled Circulation Audit and National Business Publications, Inc. NBP

P. G. LAMSON, President — GARDNER LAMSON, Publisher and Editor — A. E. BROWN, Managing Editor

Advertising Representatives:
Kennedy Associates, 60 East 42nd St., New York 17, N. Y.
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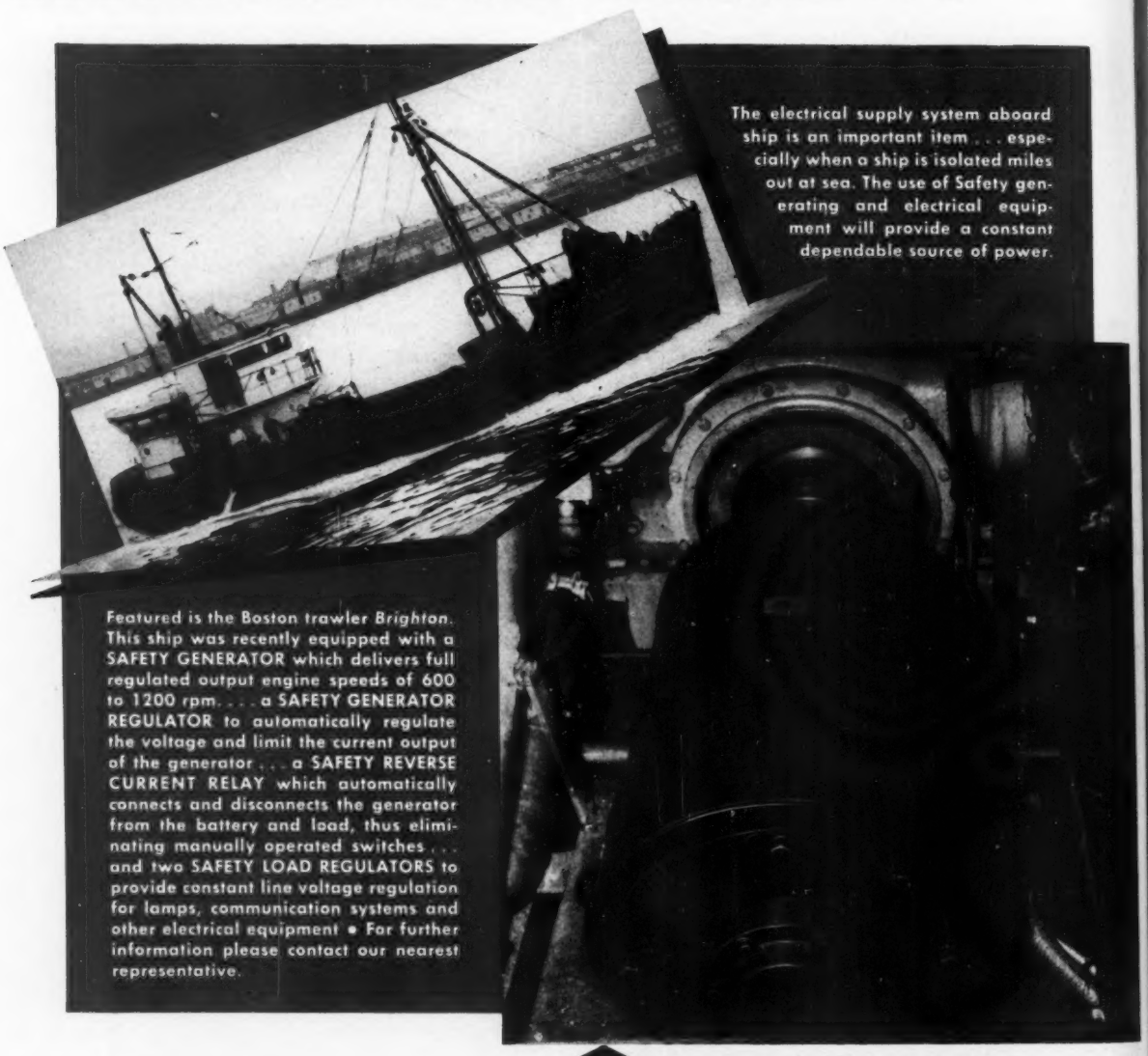
SAFETY GENERATING AND ELECTRICAL CONTROL EQUIPMENT = A CONSTANT REGULATED POWER SOURCE...



The electrical supply system aboard ship is an important item . . . especially when a ship is isolated miles out at sea. The use of Safety generating and electrical equipment will provide a constant dependable source of power.

Featured is the Boston trawler *Brighton*. This ship was recently equipped with a SAFETY GENERATOR which delivers full regulated output engine speeds of 600 to 1200 rpm. . . . a SAFETY GENERATOR REGULATOR to automatically regulate the voltage and limit the current output of the generator . . . a SAFETY REVERSE CURRENT RELAY which automatically connects and disconnects the generator from the battery and load, thus eliminating manually operated switches . . . and two SAFETY LOAD REGULATORS to provide constant line voltage regulation for lamps, communication systems and other electrical equipment • For further information please contact our nearest representative.

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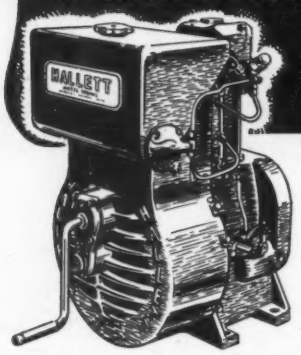
AUXILIARY POWER PAYS OFF!

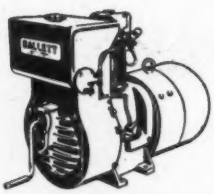


Standard Model AC-1 5 h. p. Air-cooled diesel engine

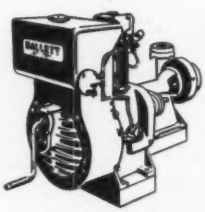
Hallett Air-Cooled Diesel Engines, because of their compactness, rugged construction and minimum weight, offer the boat owner a real "work horse" to power his auxiliaries.

The Model AC-1, using a combination power take-off, will deliver power to a small generator, bilge pump, bait pump and compressor, or may be used as propulsion for small boats.

Hallett standard one- and two-cylinder water-cooled 8 and 18 horsepower Diesel Engines are also available for a wide range of marine applications.



Hallett Diesel electrical sets from 2½ to 10 KW.



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Sounding-Lead

Critical occupations list has been revised by Department of Labor with respect to shipmasters, ship pilots, and mates and engineers, marine, chiefs and assistants. Formerly these occupations on fishing vessels were excluded, but by recent action they will be treated the same way as similar licensed officers in other marine industries.

This List of Critical Occupations applies to commercial fishing vessels which are required to have licensed officers. Such licensed officers must hold U. S. Coast Guard masters, mates, or pilots licenses and U. S. Coast Guard chief engineers, first, second, or third assistant engineers licenses. About 350 fishing vessels are affected by this revision.

Joint shrimp advertising by U. S. and Mexico was suggested at meeting held recently in Mexico City. Conferences between the Mexican and American producers developed thought that if American market could be sufficiently expanded through joint advertising campaign, financed by both segments of industry, need for restrictive tariff or quota would not be necessary.

At conclusion of the three-day hearing, all parties concerned were in accord that an International Joint Association should be formed to handle advertising, quality control programs and such other programs as might be beneficial to the shrimp industry and to the consumer. It was reported to have been agreed by the North American Delegation, which was headed by John Mehos, president of the Texas Shrimp Dealers Association, that no protariff legislation would be attempted pending the necessary time to form and put into action the joint policies agreed on at the Mexico City meeting.

Construction of new plants without permission from NPA now is allowed if they use not more than 25 tons of carbon and alloy steel, including structural steel (not to include more than 2½ tons of alloy steel and no stainless steel); 2000 lbs. of copper and copper base alloys; and 1000 lbs. of aluminum. Construction of fish plants requiring more materials than these listed require approval from the Defense Fisheries Administration. Authority for this approval was transferred to DFA from NPA.

Since fishing vessels are classified by NPA as B products, allotments of controlled materials and preferential ratings for purchase of other material requirements should be submitted on Form CMP-4B to the Ship Building Division of NPA.

Frozen breaded shrimp decontrol, as well as decontrol of sealed or deveined shrimp, both at the processor's level, were accomplished in Amendment 11 to GCPR and Amendment 13 to CPR-22. However, frozen breaded shrimp are controlled at the wholesale and retail level by CPR's 14, 15 and 16, which include fish or seafood when combined with other ingredients in "frozen foods" category.

Roy Christie, who has been Deputy Program Director of Defense Fisheries Administration, was to leave August 17 for San Salvador where he will administer fisheries Point Four program. He is being sent by Fish & Wildlife Service's Office of Foreign Activities. Purpose of program is to increase Salvador's food supply and local consumption of fishery products through exploratory fishing, recommendations for proper gear and equipment, and development of transportation and marketing.

Fish salad week was held in Canada July 27 to August 4. The week was sponsored by Canadian Horticultural Council, with firms and governmental departments cooperating. This was expected to move a great amount of fish.

Television advertising of seafood was done during 1950 by nine seafood companies selling tuna, shrimp, salmon and oysters. In first three months of year spot advertising for fishery firms was carried, on the average, by only 10 stations per month. However, during last three months of year, fishery products were being promoted on an average of 42 stations monthly.

According to the Fish & Wildlife Service, television advertising of fishery products undoubtedly benefits industry as a whole, even though each company is seeking to stimulate the sales of its particular brand.

Market outlook report for third quarter of 1951, issued by Fish & Wildlife Service, indicates that markets for edible fishery products will be unsettled, but with a fairly firm support. Report predicts that production in fisheries will be high and cannery operations at a peak until end of September, when activities are expected to drop somewhat.

Markets for fishery by-products expected to be unsettled, especially fish oil and fish meal, with fish liver oils weakest. Cold-storage stocks expected to increase rapidly and hold at high volume. Exports of fishery products forecasted as remaining at moderately low level, while import volume will be heavy.

"Pacific ocean perch" now will be an acceptable designation for a species of rockfish or rosefish being marketed in the Pacific Northwest, according to the Food and Drug Administration. Name will serve to distinguish frozen fillets of the Pacific Coast fish from similar, but different variety advertised and marketed by New England fisheries under name of "ocean perch."

Developments in packaging of frozen products include frozen breaded shrimp which are individually processed and frozen before packaging. It is claimed that the housewife can remove part of these shrimp for use without thawing the contents of the entire package. This idea also recently has been applied to the packaging of frozen fillets.

Frozen items are not the only fishery products which have had attention given to their packaging. An Atlantic Coast river herring (alewife) canner has in recent years successfully marketed canned river herring which are wrapped individually in parchment before being canned. The parchment wrap helps the fish keep their shape, and facilitates their separation when the can is opened.

A novel package is being used by a domestic company to further sales of canned sardines which it distributes. The company combines a 1½ ounce can of sardines, an individual cello-wrapped package of salted soda crackers, a wooden fork, and a napkin in a small cellophane bag. The combination is intended primarily for sale in lunch rooms and taverns as a quick snack.

A fisheries exhibition will be held August 22 to September 2 in Copenhagen, Denmark. Designed to make fish even more popular in the Capital than it is already, a feature of the show will be a huge indoor basin stocked with trout, perch, eel and variety of other fish from Danish waters. People are invited to catch them and may have them cleaned, prepared and served while they wait.

Spain will promote exports of canned fishery products from four coastal provinces, through organization recently formed. It is believed that the new export drive is to be particularly aimed at promoting exports to the United States and elsewhere in dollar area. The new export body is stated to be the third such Spanish organization to have been formed within past few weeks.

New fishery products that have been introduced to market in recent months include frozen abalone patties, frozen stuffed lobster, frozen lobster thermidor, and canned salmon croquettes. These products are creating markets for previously unused or less accepted fishery products and follow trend in modern food marketing, i.e., their appearance on family dinner table involves little effort on part of housewife.

AT LAST! A FASTER, BETTER WAY TO PREPARE HOLES FOR WOOD SCREWS!

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Screw-Mate
3-IN-1 DRILLS
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Screw fits perfectly in tapered Screw-Mate hole. Every thread holds tightly!
In ONE Quick and Easy Operation

NEW DRILL INVENTION SAVES TIME! MAKES SCREW-JOINTS STRONGER!

Each Screw-Mate drill corresponds to the exact contour of a screw. That means you can countersink, drill shank clearance and *tapered* pilot hole — all at the same time! Special 4-in-1 drills *counterbore,* too. No longer must you perform 3 or 4 drilling operations, or attach special countersinks and counterbores to drills.

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Screw-Mates are available in a wide variety of sizes for use with most screw sizes on wood, plastics, slates, synthetics, etc. Made of tough high-tungsten steel, they outlive ordinary drills. Screw-Mates fit any drill gun, drill press, or hand drill.

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#10 x 1½"
#10 x 2"
#12 x 1¼"
#12 x 1½"
#12 x 1¾"
#12 x 2"
#14 x 1¼"
#14 x 1½"
$1.00 each
#12 x 2½"
#14 x 2"
(Diameter of drill shank is ¼".)

Screw-Mate Counterbore, Countersink and Tapered Drill

Drill Size	Plug Size
#10 x 1½"	3/16" x 3/16"
#12 x 1¼"	1/4" x 1/4"
#12 x 1½"	1/4" x 1/4"
#12 x 1¾"	1/4" x 1/4"
#14 x 2"	1/4" x 1/4"
#18 x 2"	5/16" x 5/16"

Diameter of drill shank is 5/16"
Price $2.50 ea.

Handy Utility Set
5 commonly used sizes packed in handy drill-holder-box.
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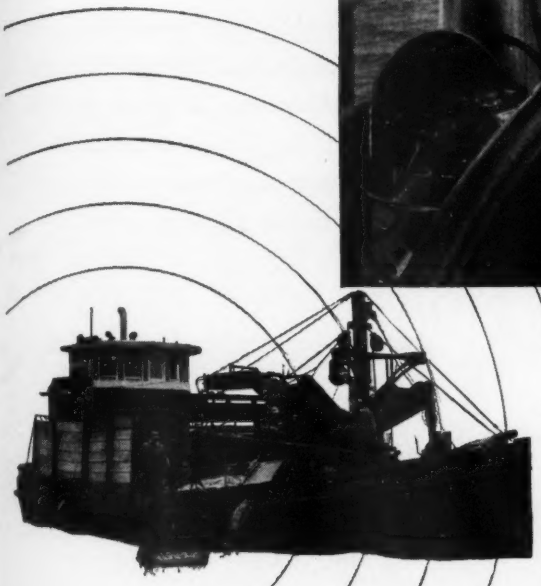

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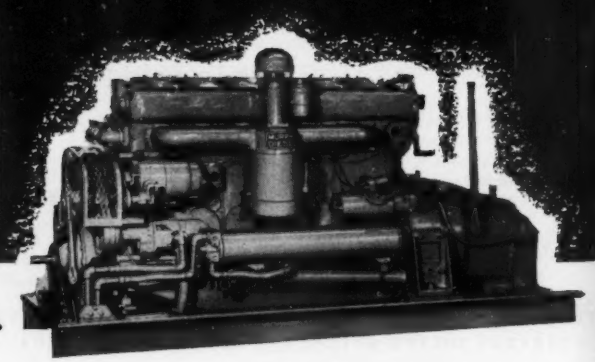

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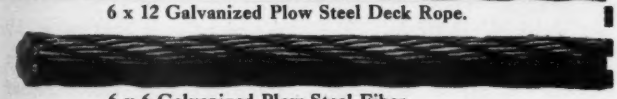

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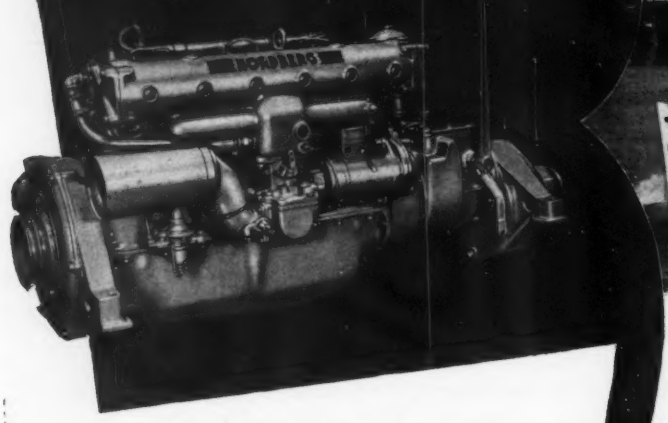

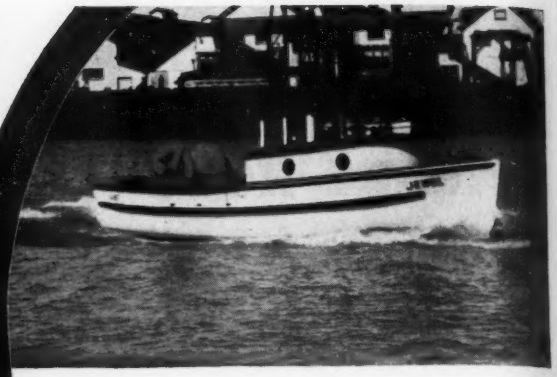

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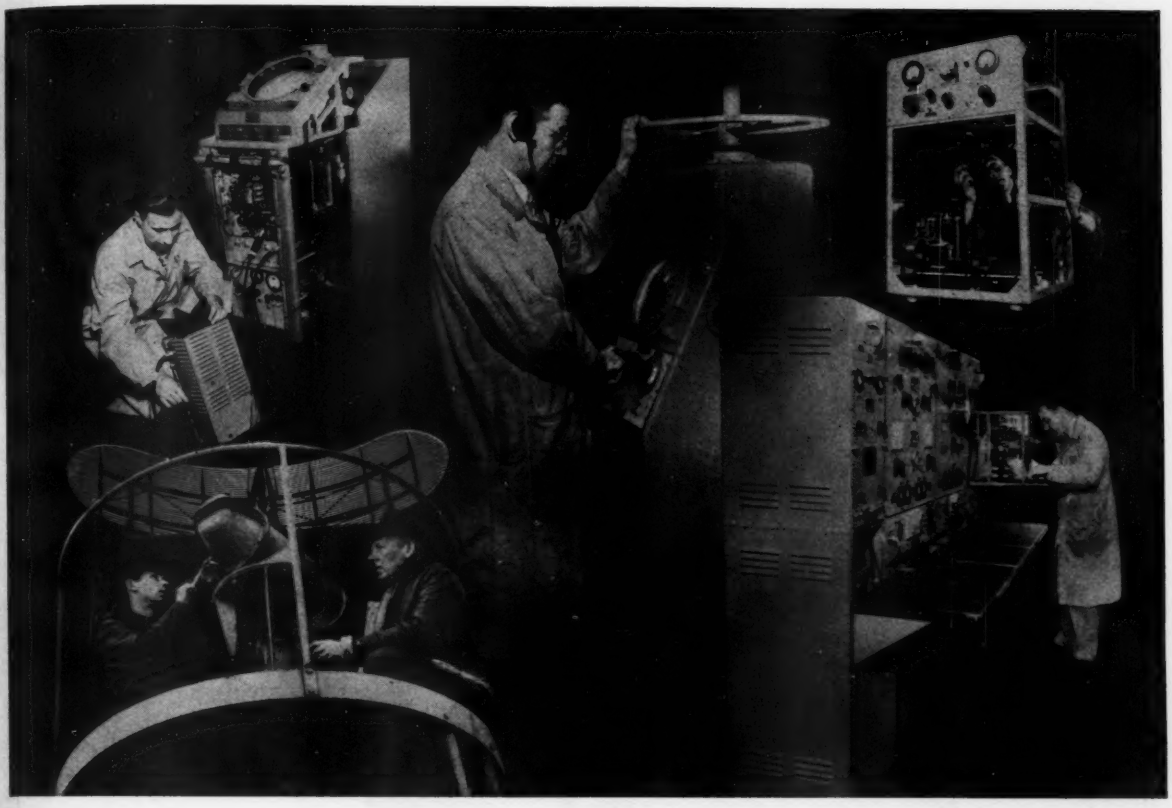

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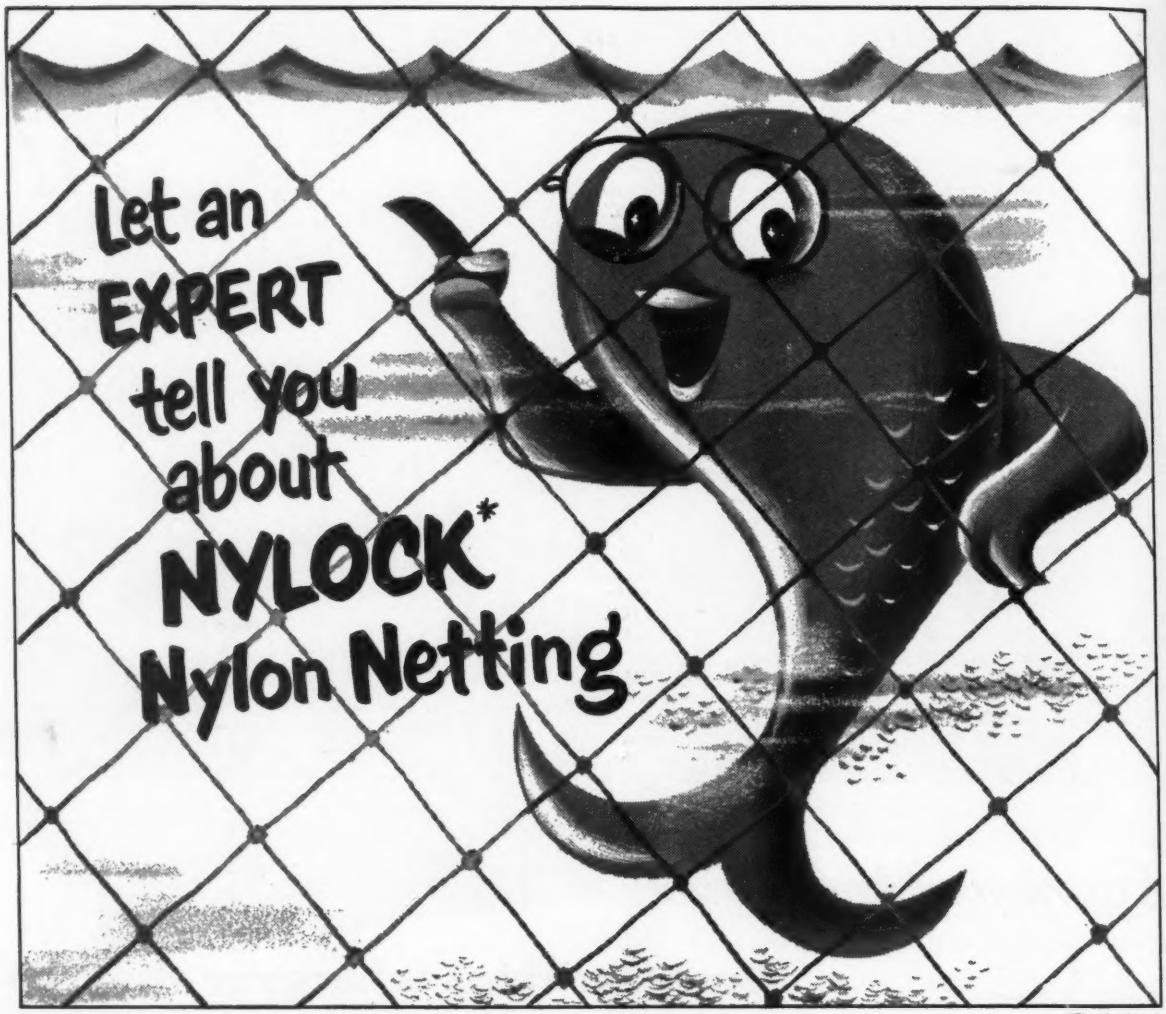

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Diesel Lubrication on Fishing Boats

By J. F. Drake, Jr. and R. W. VanSant, Jr.*

THE selection of the proper Diesel engine lubricating oil for fishing vessels depends upon careful analysis of factors influencing engine operation, including hull design, engine design, engine installation, fuel, maintenance, and the nature of service required in the particular operation.

Hull size and shape, as well as the nature of operation, affect the type of engine required. For example, the larger hulls normally used in deep-water fishing provide ample space for medium-size engines in the range of 300 to 1000 hp. The smaller hulls are better suited to the use of small high-speed Diesel engines.

Detergent oils are generally recommended for high-speed Diesel engines. The load and speed at which the medium-size engines are operated may determine whether a detergent or non-detergent lubricating oil should be used. Engine load and speed are affected by the horsepower requirement of the hull at various vessel speeds, as shown by the accompanying graph for a specific hull powered to attain maximum design speed of 10 knots. A reduction in speed to 5 knots reduces the horsepower required to only 10.5% of that required at 10 knots. Of course, the power requirement varies with cargo weight, water conditions, and widely between different hulls.

From the graph it may be seen that increasing the vessel speed from 5 knots to 10 knots more than doubles the exhaust temperature with most rapid increase occurring between 9 and 10 knots. The higher exhaust temperature increases valve stem and piston temperatures, raising the temperature of oil coming in contact with these hot parts. This is true even though the crankcase oil temperature has not changed or has increased only very slightly since it is automatically controlled by the oil cooler.

High localized temperatures resulting from high load operation of the engine increase the oxidation rate of the lubricating oil which may contribute to piston lacquer deposits, ring sticking, blow-by, and bearing corrosion. If it is necessary to operate the engine under sustained high loads, the oil should have high oxidation resistance and detergency.

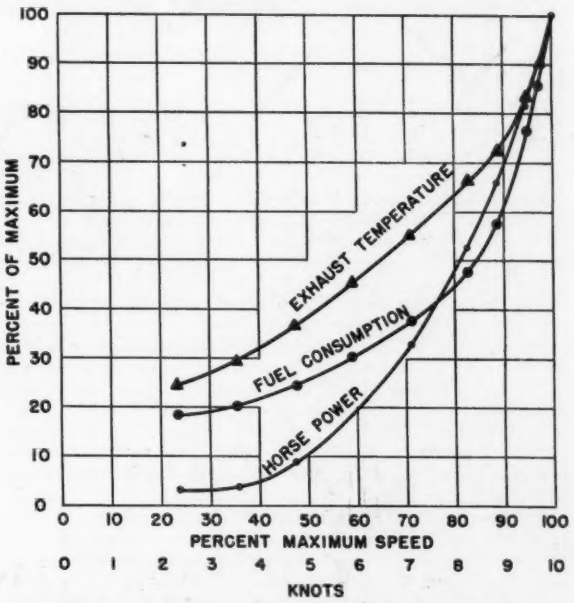
Engine Installation

The installation of the engine affects its operating temperatures and efficiency. For example, if the exhaust line from the engine compartment to the muffler makes numerous bends, it will result in a higher discharge pressure on the exhaust side of the engine than if a straight line of the same size were used. The higher exhaust pressure reduces efficiency and will cause the piston and exhaust valve temperatures in the engine to rise. This tends to increase the need for higher oxidation, stability, and detergency of the lubricating oil. Likewise, a badly clogged muffler has the same effect. Restrictions in the intake system of the engine also will increase the piston and oil temperatures.

The installation of the engine must provide for lubricating oil and water coolers of adequate size. Approximately as much power in the form of heat must be dissipated through the cooling system as the power transmitted by the crankshaft of the engine. Therefore, the coolers must be of the proper size and the system should be thermostatically controlled to maintain the proper operating temperatures at all vessel speeds.

Choosing the Fuel

The choice of the fuel for the fishing vessel Diesel engine is particularly important since its quality will markedly affect the operation of the engine, time between engine overhauls, and the performance required of the lubricating oil. In general, the medium-speed engines will accommodate a wider range of fuels than the small high-speed types. The initial indications of an unsuitable fuel for a particular engine may be a smoking exhaust, hard starting, the frequent plugging of fuel filters, and sticking injectors.



Graph showing the percent of maximum exhaust temperature, fuel consumption and horsepower which is reached at various vessel speeds up to a maximum of 10 knots.

The unfortunate choice of a high viscosity, low ignition quality fuel for a small high-speed engine may result in excessive deposits in addition to the foregoing malfunctions. The deposits are brought about by incomplete combustion of the fuel, resulting from poor atomization due to the high viscosity and poor ignition characteristics. This is particularly true at low engine load and speed, frequently resulting in partially burned fuel oil entering the crankcase lubricating oil system from the combustion chamber. The unburned portions of the fuel continue to oxidize, increasing the deposits in the crankcase and at other points throughout the lubricating oil system. These deposits also may accumulate in the oil coolers preventing adequate cooling.

Obviously, fuel deposits can be minimized by the selection of the proper type of fuel for the engine. Excessive fuel deposits also can be formed under conditions of prolonged light load and low-speed operation even when using the best of fuels. If it is necessary to operate under light load and at low speed, an improvement in engine conditions can be obtained through the selection of a suitable detergent lubricating oil.

Exhaust smoke and high internal engine temperatures occur even when using the best fuel at excessive speed when the engine is overloaded. This type of operation reduces lubricating oil life, engine life, and markedly increases the fuel consumption rate as may be seen from the curve in the accompanying graph.

Maintenance of Engine

The importance of mechanical maintenance, adjustments, and cleanliness cannot be overstressed. Unless the mechanical condition of the engine is properly maintained, reliable service and the most economical performance cannot be obtained even when using the highest quality fuels and lubricants.

(Continued on page 44)

*Mr. Drake is Chief Fuels and Lubricants Engineer, Marine Engine Section, Gulf Oil Corporation, while Mr. VanSant is Chief Fuels and Lubricants Engineer of Gulf's Diesel Engine Section.

Fish Processing Equipment on Factory Ships

G. C. Nickum*, Naval Architect, Describes the Fillet Line, Freezing Machinery, Reduction Plant on "Pacific Explorer"

REFRIGERATION installations on factory ships represent a large part of the total expense involved and are generally the most important part of the job of converting a vessel for fish factory use.

The basic processing done by the *Pacific Explorer*, which was designed after the war to handle tuna caught in the Southern Pacific and crab and bottom-fish fillets in the Bering Sea, was either freezing or a combination of freezing and canning.

The requirements on which the design of the refrigeration installation on the *Pacific Explorer* was based were that it should be able, in southern waters, to freeze tuna at the rate of 120 tons per day; freeze 10 tons of ice per day; and hold the entire refrigerated storage space at 0 deg. Fahr.; and in northern waters that it should be able to freeze fillets at the rate of 5,000 lbs. per hour or 60 tons per day; to freeze halibut on shelf-type freezers at the rate of 25 tons per day; and to keep the refrigerated holds at 0 deg. Fahr.

On the *Pacific Explorer*, the actual freezing of fish products was done by both air-blast and contact methods. The air-blast method has the advantage of a fairly quick rate of freezing and takes up a relatively small amount of space when the product is of a uniform shape and size. The disadvantage is that the flesh of raw fish brought in direct contact with the air-blast will get a so-called "freezer" burn which spoils the quality of the product. Further, only products of uniform size can be loaded symmetrically on to the dollies or on to the freezing trays designed to fit the air passage in the tunnel.

The contact method of freezing, which is commonly used for the freezing of halibut or other large fish which have to be dressed prior to freezing, can freeze large and non-uniform products without discoloring or burning. The term "direct contact" is a partial misnomer, since the shelf type of coil which was used on the *Pacific Explorer* is not solely direct-contact. Thermal convection of air currents undoubtedly plays an important part in the freezing action.

As yet, no freezers of the double-contact type used so extensively by "Birdseye" in the frozen-foods industry have been used on board ship. This method has advantages for fillets or crab and is worthy of further investigation.

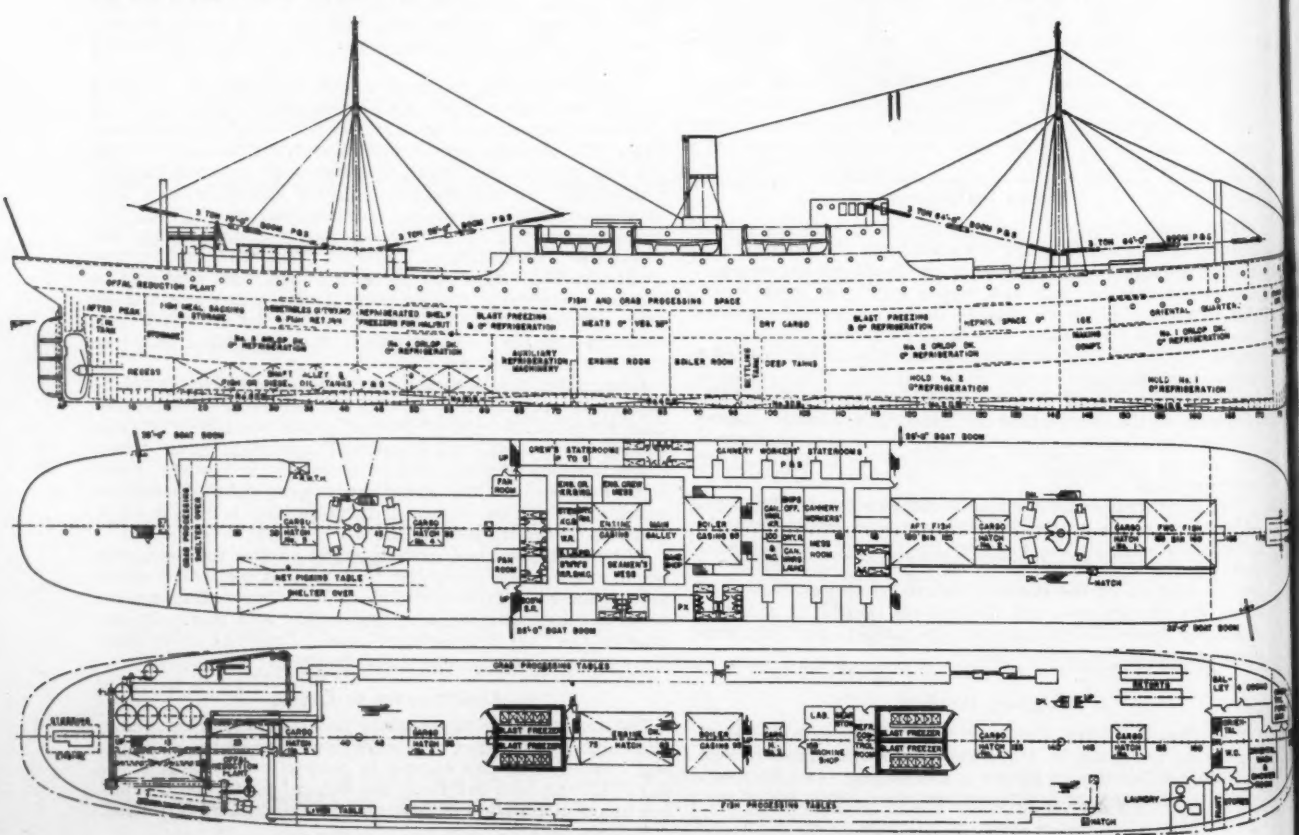
Ice Plant

The ice plant on the *Pacific Explorer* deserves mention because it is the only one ever installed on a sea-going ship. It was conventional, as far as the tank, agitator, ice cans, ammonia coils, thaw tank, can filler, can dump and can hoist were concerned. It had a rated capacity of 10 tons per day at a 36-hour freezing rate using 300 lb. cans. It met this capacity in calm waters, but had definite difficulties when any kind of a sea was running.

The only unusual features of the tank were the insertion of swash bulkheads in an attempt to minimize the effect of the movement of the ship, and the addition of a brine

(Continued on page 32)

* Second installment of article containing a digest of lecture presented to the Pacific Coast Section of the Society of Naval Architects and Marine Engineers by Mr. Nickum.



Outboard profile and upper decks of fish factory ship "Pacific Explorer". (Courtesy W. C. Nickum and Sons).

Chesapeake Rockfish Size Limits Being Studied

THE value of the law restricting the size limit of striped bass, or "rock," in Chesapeake Bay waters often has been debated pro and con. From a biological standpoint, an effort now is being made to obtain an objective answer to this question. Recently Dr. Howard W. Jackson, zoologist at the Virginia Polytechnic Institute in Blacksburg, and Dr. R. V. Truitt, director, and Romeo Mansueti, biologist, of the Maryland Department of Research and Education, at Solomons, conferred on plans for organizing and interpreting available data.

During the last few years Dr. Jackson has cooperated with the Chesapeake Biological Laboratory on a project to discover the viability and degree of effectiveness of striped bass as spawners at different sizes and ages. The Laboratory has actively collected eggs from striped bass in all stages of growth and forwarded them to Dr. Jackson for analysis. Laboratory personnel have received cooperation from Maryland fishermen who have allowed roe to be collected from their fish for study.

By studying the eggs—that is, weighing, counting, and observing them—and correlating this data with the age and weight of roe or "cow" striped bass, some clue as to the fish's sustaining ability to produce its own kind may be gathered for the better management of the fishery. An important part of this study is to discover whether young or old "cows" can produce the more vigorous strains of young for future stocks of fish. This will be determined by observing the state of the ovaries in various stages of development, the embryonic development, and rate of growth of fish from different age groups of striped bass. The problem ultimately resolves itself to the potentiality of the germ plasm in young and old.

Commercial fishermen and biologists alike have asked themselves: (1) Do roe striped bass under 15 pounds produce as many eggs and spawn with as much vigor as those over the limit? (2) Are old striped bass weighing up to 50 pounds able to contribute to the productivity of Chesapeake Bay as efficiently as young spawners? Or are they a detriment to the population by eating more food and spawning less? (3) Are the best potential spawners, which occur in larger numbers, a part of the group made up of fish under 15 pounds? (4) Should the brood stock of young fish between three and 15 pounds be protected? (5) Do large old "cow" striped bass spawn every other year? If so, when and how often?

Biologists have found that in general, male or "bull" striped bass are sexually mature at the age of three, the female or "cow" often are not mature and ready to spawn until they are in their fourth year. A female fish produces an amazing number of potential baby bass at one spawning of which but a small percentage reaches maturity. Statistics are available as follows: 3 year-old female, at 3 pounds, produces 14,000 eggs; 4 year-old female, at 4½ pounds, produces 265,000 eggs; 9 year-old female, at 15 pounds, produces 1,300,000 eggs; 12-year-old female, at 50 pounds, produces 3,300,000 eggs; it has been estimated that a 75 lb. female produces 10,000,000 eggs.

Such information on the productivity of various aged striped bass does not exist to a sufficient degree to provide a reason for a serious reconsideration of the 15-pound limit. No striped bass less than 11 inches in length or weighing more than 15 pounds can be taken (except at Hog Back Shoals in the Susquehanna R.) but recently the Maryland State Legislature tried to increase the maximum size limit from 15 to 25. The law would have given the Maryland commercial fisherman a better chance to

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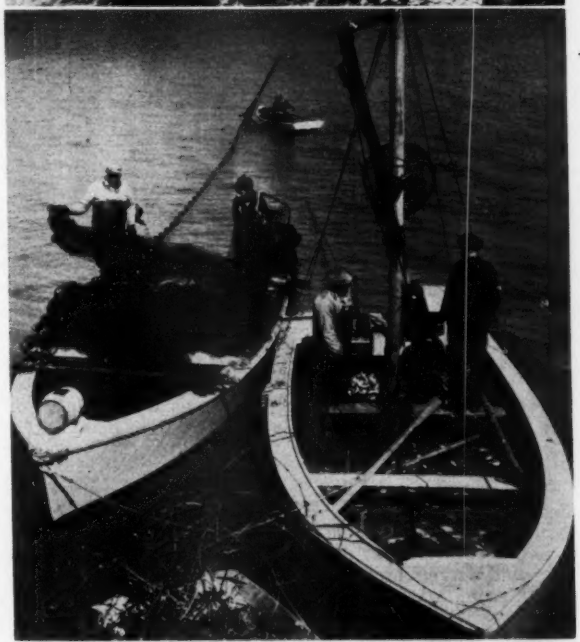

Top: A day's catch of rockfish in St. Clement Bay being hauled aboard boat owned by Capt. Frank Brown of Palmers, Md. Center: Capt. Chester Cullison of the Maryland Tidewater Fisheries Dept. checking on "rig" used by George Woodall. Bottom: Capt. Brown, left, watches Capt. Cullison hook a 14-pounder on his scales. (Washington Post Photos).

Gloucester's Famed "Man at the Wheel"

Scene of 60th Annual Fishermen's Memorial Service

THE 60th annual Fishermen's Memorial Service, honoring Gloucester fishermen lost at sea during the preceding year and in other years gone by, was held August 5 with customary picturesque ceremonies, including casting of flowers on the water beside Blynman Bridge, and the laying of wreaths at the nearby Fishermen's Monument.

Attendance at the ceremony was the largest in years, with more than 4000 present to witness the exercises, which were under the auspices of the Gloucester Fishermen's Institute. The program opened with a procession from the Fishermen's Institute in which directors of the Institute, fishermen and retired fishermen, and participants in the day's ceremonies, took part.

The names read as the 1950-51 toll of Gloucestermen were all crew members of the ill-fated Boston trawler *Gudrun*, and numbered seven.

An impressive addition to the program was the scattering of the ashes of the late Leonard Craske, sculptor of the Fishermen's Monument, in the Annisquam River.

"Man at the Wheel" Fishermen's Monument, Gloucester, Mass.

In tracing the history of the Fishermen's Monument, Edmund F. Moran of East Boston, points out that in the halcyon days of the year 1923, the fishing port of Gloucester, Mass. celebrated its tercentenary. Fishing schooner races were staged, off the coast of the Bay State, and colorful pageants were conducted to commemorate the founding of Gloucester in the year 1623.

Modern appliances had revolutionized the commercial fishing industry. That arch enemy of romance, the auxiliary gasoline engine, had invaded the local fishing fleet. The prosaic power of machinery had swept these, last of all wind-driven craft, from the seaways of the stormy North Atlantic.

In the Fall of 1923, the few remaining "dummy" vessels, including the schooners *Henry Ford, Catherine, Oretha F. Spinney* and *L. A. Dunton* were converted to power. Thus modernized, their sail plans were modified. Their lofty topmasts were struck, forever. The historic year 1923 saw the end of the "Engineless Era," the "Golden Age" of the American fishing schooner.

Accordingly, the Gloucester populace clamored for a permanent memorial, to commemorate the spirit of the era, just passed. They desired to erect a monument, in tribute to the indomitable spirit and courage of the native sons who had manned and skippered the tall-sparred, white-winged racers for the past three centuries.

A. W. Buhler, an artist and Gloucester resident for more than a quarter-century, was the first to suggest that a Gloucester fisherman, in characteristic pose, done in everlasting bronze, would be most appropriate.

After due consideration, the Memorial Committee announced a Sculptor's Competition, open to all. The late Leonard Craske, a noted sculptor, was among those who accepted the challenge. With characteristic foresight and thoroughness, he voyaged to the fishing banks in the small Gloucesterman *Elizabeth Nunan*. Offshore, on the tumbling storm-tossed waters, he observed the hearty gleaners of the sea, under actual operating conditions.

Returning, the sculptor scoured the waterfront of the teeming fishing port for additional data. On the shores of old Cape Ann, he came upon a section of a wrecked vessel's deck, with steering wheel and wheel box intact. Salvaging the piece of wreckage, Mr. Craske transported it to his Boston studio.

He fashioned a working model, and it was selected as the most appropriate in a field of more than 40 entries. The committee then authorized him to execute the full-size Memorial. From his talented hands, the now-famous Man at the Wheel sprung into being.

The statue was poured by the French Sand method, then assembled in a bronze foundry at Providence, R. I. Being a hollow casting of statuary bronze, the heroic figure measures 10½' from the crown of the sou'wester to the tip of the square-toed sea boot.

The sculptor created a crouching, oilskin-clad figure standing on the slanting deck of a schooner. He is well-braced, feet well apart, clutching the massive wheel. His reeling schooner heels sharply, in a spanking, whole-sail breeze. Under full sail, the gallant vessel cuts a foaming swath, through the wintry sea.

The little fore-and-after is beam-loaded, with finny denizens of the deep. Homeward bound, she seems to know it and to revel in it, straining at her rudder, like a thing alive. The Gloucesterman is close-hauled on the port tack. The grim-visaged, chunky wheelman does not watch the compass. He is steering "by the wind." Head erect, he is peering aloft. Sharp eyes are glued to the trembling leech of the fore-gaff-tops'l. When regarded from the center of the rotunda, the wheelman seems to come to life. A look of determination crosses the weathered, graven countenance. One can almost hear him passing the steering orders to his relief: "By the wind, bully."

The statue was transported to its present site in the center of Western Avenue Esplanade where it stands atop a pedestal of rough-hewn, Rockport granite on a rising swell of ground. On the face of the granite pedestal, appears the following Biblical inscription: "They That Go Down to the Sea in Ships." Beneath: "1623-1923." The statue faces seaward, overlooking a semi-circular bulge in the cement sea wall. On its port hand is the fishing metropolis, while to starboard lies Blynman Bridge. Directly ahead are the teeming harbor waters and Ten Pound Island.

In August, 1925, the Permanent Memorial was unveiled and dedicated. In conjunction with the annual Fisherman's Memorial Service, a solemn ceremony was conducted. The dream of countless years had materialized. The rise of its reputation and the spread of its popularity were meteoric. Mr. Crask's masterpiece has become a mecca for visitors, and great sentimental value has attached to this Immortal Wheelman.

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compete with Virginia fishermen, who are allowed to catch striped bass up to 25 pounds.

Massachusetts allows its fishermen to keep "rock" over the 15-pound limit. If Chesapeake Bay is the nursery area for a large part of the striped bass population along the Northeastern Coastal States, it can be seen that Maryland fishermen are being placed at an unfair disadvantage if large bass swim unmolested from Maryland waters only to be caught months later in New England water.

Striped bass have not been increasing appreciably over the years, except for the occasional appearance of dominant year-classes—groups of bass that were produced in such huge amounts in certain years that they caused a marked increase in the numbers caught for short periods. What the biological basis for such "bumper" crops is not known.

Closed Season Needed for Texas Redfish, Trout

ACCORDING to J. L. Baughman, chief marine biologist, Texas Game, Fish & Oyster Commission, Rockport, Texas, the long-term study of redfish and speckled trout undertaken in Texas during 1949 has furnished enough material for some definite recommendations, aimed principally at protecting spawning and nursery grounds in the area embraced by the survey. The investigation was conducted by the Texas Commission in cooperation with the Copano Research Foundation, and the fish studied—the redfish, or channel bass, and the speckled trout, or spotted weakfish—are the two most important food and game fish of the Texas coast.

The work was done by Dewey W. Miles of the Copano Foundation and by Ernest G. Simmons of the Texas Commission. In general, the problem was approached from two angles: Miles operated throughout the bays from the Laguna Madre to Matagorda, conducting a survey of spawning areas, growth, food, tagging fish and determining spawning times, while Simmons operated from a fixed station, the fish trap, between St. Joseph and Matagorda Islands.

Habits of Fish

The work so far has established that in this area speckled trout seek the more remote parts of the back bays in which to spawn. This spawning begins early in April and lasts to the middle of November, reaching its height from May to July, inclusive. Small, post-larval trout need the protection of vegetation for cover and as a place to forage for food during their first four months of life. At this time they are found in water from 2½ to 5½′ in depth and they favor cool areas, where the maximum temperature is less than 29°C., and the salinity range 22 to 28 parts per thousand.

Basic food of the young speckled trout for the first six months of their life consists of larval, post larval, and young of the commercial shrimps *P. aztecus* and *P. setiferus* and of the grass shrimp, *Paleomonetes*. The sheepshead minnow (also called chub, or chubby) is eaten, as are various copepods, crabs and fish.

The case of the redfish is somewhat different. The adults spawn in the Gulf and within a short time young fish begin to appear in the passes connecting the Gulf with the bays behind the barrier islands. These small fish are carried in by the incoming tides and, like the

(Continued on page 49)

The "Louise R.", 50′ red snapper boat owned by Marco Ragusin of Galveston, Texas, and run by Capt. Edward V. Dunne. She carries a crew of four, and is powered with a D4600, 70 hp. Caterpillar Diesel with 3:1 Twin Disc reduction gear and 34 x 32 Columbian propeller. The vessel is equipped with Surrette batteries, Mustad hooks, Bludworth depth sounder, and is painted with Woolsey's paint.

Capt. Charles W. Miller of Chatham, Mass., being interviewed by CBS-TV star Dorothy Doan, of the "Vanity Fair" show. Capt. Miller is showing Miss Doan his Bendix depth recorder chart, which gives him a continuous picture of the ocean floor and schools of fish as he sails over them.

Provincetown Fishermen Make Good Catches of Small Tuna

Huge quantities of small tuna fish were caught in Provincetown traps up to mid-July, with nearly 5,000 fish landed on July 14 and nearly as many on the 16th. Earlier in the month Capt. Ulysses Simmons unloaded close to 500 lbs. at the Cape Cod Fisheries and on the same day Capts. Manuel Motta and John Silva landed more than 70 tuna at Seafood Packers, Inc.

The catches of tuna have been mainly small fish, ranging in weight after dressing to an average of between 20 and 30 pounds each. Up to mid-July, there was an almost total lack of large tuna in the traps.

Trap fishermen in Provincetown have been hampered this season by the huge quantities of squid which, after an absence of several years, have returned to Lower Cape waters. The quantities are so large there is little commercial value. Draggers also have hauled up many of the fish, only to throw them back.

Mackerel fishing continues spotty, with no large run reported thus far. Draggers have had fair luck at whiting, with one or two going after groundfish, but finding them spotty also.

Striped bass have been running, and one commercial handler of this type had nearly 2,500 lbs. of the fish from a night's fishing along the shores.

Lobsters Get Around

According to the State Division of Marine Fisheries, lobsters get around. The Division released 250 tagged lobsters May 11 off Woods Hole.

Two of the tags have recently been returned to the Division by lobstermen. One reported finding lobster No. 45 in a trap off Chatham about 50 miles from the point of release. The other turned in lobster No. 40, found near Gay Head, a town 25 miles away on Martha's Vineyard.

Seed Quahogs Planted

Wellfleet reports the planting of 100 bushels of seed quahogs on Egg Island, Wellfleet Harbor, with this area closed for commercial shellfishing until further notice. Provincetown shellfish flats east of the West End breakwater also have been closed for the Summer.

Rare Fish Landed

Straying far from its usual haunts, a fish dolphin was caught in Cape Cod Canal on July 12 by Joseph Torres of Watertown. The fish dolphin, not to be confused with the mammal dolphin, is rare in this area.

The few which have been taken north of Hatteras have been found 200 to 300 miles at sea. The fish weighed 5 lbs. 3 oz., and was taken in a dip net. The specimen will be sent to the Woods Hole Oceanographic Institution to be added to its collection of oddities.

New York Has Large Oyster Production at Southold

Shellfish production in the State of New York totaled 1,987,700 bushels valued at $8,647,500 during 1950. The yield of market oysters was 1,083,400 bushels, and accounted for over half of the total shellfish landings. The greater part of the oysters, 1,006,800 bushels, was produced in the town of Southold.

On the basis of value, the town of Southold was in the lead, with shellfish production being worth $5,121,150. Runner-up was Islip, with a $677,600 shellfish take.

The hard clam take of 625,450 bushels was approximately 36,000 bushels over that of 1949, but was slightly below the average for the past five years. Islip, with 158,600 bushels, had the largest clam yield, followed by Southhampton, with 120,100 bushels.

Seek New Fulton Market Building

Wholesalers doing business in the old Fulton Fish Market building on the lower East River waterfront disclosed recently that they have requested the city to replace this structure with another, farther back from the South St. roadway.

What the fish dealers want is to move their operations back from the overhead extension of the Franklin D. Roosevelt Drive to the new Brooklyn tunnel. It is scheduled to be constructed in front of their present building, in fact, even above the loading and unloading platform.

Like the present building, the new structure would have to be erected on piles driven into the water. It would not have to be placed any farther back from the street, however, than another structure, housing fish stands, which the city erected nearby 12 years ago.

Cost of a new building is estimated at about half a million dollars. City officials think the Fulton Market Fish Association, composed of dealers with stands in the present structure, should provide the money.

The present building is owned by the city, to which it reverted after 30 years. Rentals in leased space since then have totaled around $1,000,000.

Three Men Injured in Fishing Boat Fires

Capt. James Raynor and his nephew, Jerry Tuthill of Greenport, were painfully burned last month when an explosion of gasoline fumes set fire to the 46-ft. party fishing boat *Gem II*, owned by Capt. Ted Squires of Hampton Bays.

For the past few months Capt. Squires has been acting as skipper of the trawler *Fish Hawk*, owned by Pell Bros. of Greenport, and Capt. Raynor has been in command of the *Gem II*.

Another fishing boat, the *Edith L. Hudgins*, caught fire last month as the result of a gasoline explosion at Montauk, and her skipper, Capt. Norman Edwards of Amagansett, was removed to the hospital suffering from severe burns.

The 42' pound-netter "Samuel Fleet", owned by Capt. Raymond A. Vail of Riverhead, L. I., N. Y., shown in front of Capt. Vail's fish wharf. The vessel has a 40 hp. Palmer gasoline engine with 24 x 24 Columbian propeller. Augur nets, Columbian rope and Gulf lubricating oil are used.

"Nora" Repowered

The dragger *Nora*, owned by E. and L. Fiedler of Greenport, L. I., N. Y., has had a new D-90 Lathrop Diesel installed at the Lathrop dock in Mystic. The vessel was built 8 years ago by F. G. Post & Son, Inc., Mystic, and has a Twin Disc reverse and reduction gear.

Gloucester Gets First Trip Of Tuna Research Vessel

The first trip to be landed by the Fish & Wildlife Service's tuna research vessel *Western Explorer* was unloaded at Gloucester on July 17. The 22,400-pound catch of tuna was purchased by Davis Bros. Fisheries Co.

The tuna were caught on the vessel's second cruise, which began July 7. The fish were taken in two sets made between Race Point and Wood End, Provincetown, on July 13. In the first set eight tons of bluefin tuna averaging from 25 to 50 lbs. in weight were captured, and two tons of the same size fish were caught in the second set, which was made in 15 fathoms of water.

Dragger "Sol" Sinks

The 81' Gloucester fishing dragger *Sol* sprang a leak while at anchor 20 miles south of Cashes Ledge Buoy and sank on July 25. The *Sol's* crew of six, including owner-skipper Capt. Albino M. Pereira, was taken aboard the dragger *Raymonde*, Capt. John Ribeiro.

First Big Trip of Dabs

The season's first big trip of dabs arrived in Gloucester on July 3 aboard the dragger *Mother Ann*, Capt. Jerome Noble. They hailed for 250,000 lbs. which were sold to Gorton-Pew Fisheries, giving them a $12,000 gross stock.

Lands Big Menhaden Trip

One of the heaviest fares of fish landed at Gloucester recently was that of the southern seiner *Pluck*, which weighed out 249,400 lbs. of menhaden on July 19. The *Pluck* comes from Reedville, Va., and is in command of Capt. Mazingo.

Earlier in the month four mackerel seiners came in with menhaden catches—the *Rose Marie*, *Rosie & Grace* and *Alden* had fares of 103,000, 122,000 and 119,000 lbs. respectively, while the *Salvatore* had 26,000 lbs. of menhaden, caught in the bay between Salem and Boston.

Whiting Fishermen Badly Burned

An explosion and fire in the vicinity of the engine and in the deckhouse of the 36-ft. whiting dragger *Mon* in the harbor last month resulted in serious burns about the bodies of James Sinagra and his crewmate, Henry Arcand. The boat was so damaged that it may be a total loss.

"Evelyn G. Sears" Lands Second Sword Trip

The swordfisherman *Evelyn G. Sears*, Capt. Johnny Burnham, landed her second trip of the season the latter part of July. It consisted of over 20 fish. The vessel landed her first trip of 53 swordfish at Boston on July 9.

"Caroline & Mary" Now "Catherine L. Brown"

The dragger *Caroline & Mary* has been renamed *Catherine L. Brown* by her owner, Capt. Louis Brown. The latter formerly skippered a dragger by the name of *Catherine L. Brown*, but the vessel was lost.

"Yankee" to Be Repowered

The 75' seiner *Yankee*, owned by Ray Adams, is being converted for redfishing and repowered with a 4 cylinder, 180 hp. Burmeister & Wain Diesel which will turn a controllable pitch propeller at 450 rpm.

New Bedford Freezing Plant Faces Foreclosure by RFC

Daniel F. Mullins, treasurer of the Harbor View Marine Corp. of Fairhaven, owner of Mullins Freezer, has disclosed that the firm faces foreclosure by the Reconstruction Finance Corporation. The Mullins plant was built after World War II to fill a need created by increased wartime demand for frozen and packaged fillets. It is the only large freezer in Greater New Bedford offering its services to all fillet dealers on an equal basis.

Mr. Mullins has enlisted the aid of all phases of the New Bedford fishing industry, Mayor Arthur Harriman of New Bedford and the Fairhaven Board of Selectmen, to prevent sale of the establishment to private interests which it is believed might operate the plant to the detriment of the industry as a whole.

Mr. Mullins has emphasized that the need of the plant is as great as it was six years ago, and that as much as 200,000 lbs. of fish were taken in during a single day in July. Mayor Harriman has been authorized by the fishing industry to seek a refinancing plan satisfactory to both the RFC and the owners, or, if this proves impossible, to propose State ownership. Mr. Mullins points out that New Bedford is the only large fishing port in Massachusetts without State-operated freezing facilities.

Request City-Appointed Auctioneer

Frank S. Silvia, chairman of the New Bedford City Wharf Commission, has received a request that an independent auctioneer be appointed to conduct the daily sale of fish at New Bedford Pier 3. Accompanying the request that the union delegates be replaced was a proposal that each purchasing concern be limited to one bidder at the auction to alleviate confusion.

The request was made by John W. Craig, general manager of Wes-Stan Co. who argued before the commissioner that a final bid made by him had not been recorded at a recent auction, causing him to lose a boatload of fish. The argument for a more efficiently run auction was seconded by William D. Eldridge, treasurer of L. S. Eldridge & Son.

Want Navigation Aid Defects Reported

New Bedford fishermen and mariners were requested on July 26 to report directly to the 1st Coast Guard District Commander any defects in, or displacement of, aids to navigation. Rear-Admiral H. G. Bradbury of Boston said reports concerning such matters should be prefixed "Coast Guard" if sent by radio, and transmitted directly to one of the Government shore radio stations.

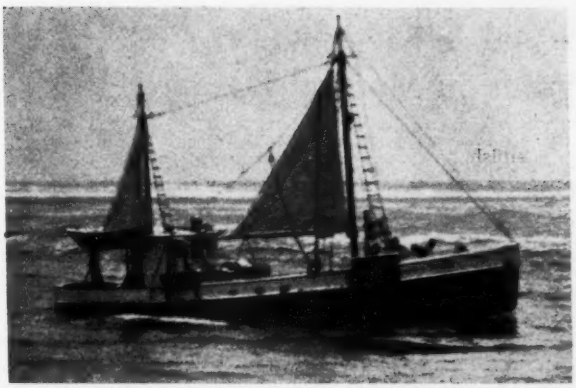
Quahogs to Be Planted in Priests Cove

Fairhaven commercial shellfishermen received assurance from the Board of Selectmen on July 23 that their wishes would be considered in carrying out the remainder of the 1951 quahog planting program. A delegation of fishermen charged earlier that the program mapped out by Tracy W. Marks, shellfish warden, and approved by Selectmen, provided for shallow-water planting for the benefit of holders of resident permits, but did not include offshore planting for the benefit of commercial diggers.

The Selectmen have directed Mr. Marks to plant the deep-water area known as Priests Cove. About 300 bushels of stock will be planted if the shellfish warden is able to obtain sufficient seed. Mr. Marks reported he already has planted 250 of the 1,000 bushels of stock he is authorized to purchase this year.

New Scalloper "Magellan II"

A new 45' scallop boat, the *Magellan II* built by her owner, Capt. Sebastian Goncalves of Mansfield, Mass., was launched recently in the East Taunton River. She is equipped with a 150 hp. Gray Diesel and Hathaway winch. A 30-watt Apelco telephone and Submarine Signal Fathometer Jr. were furnished by Whitehead Marine Radio, while the blocks and gallows frames were supplied by Marine Machinery Co.



Capt. Leif Talgo's 61' x 16' x 8' dragger "Captain Deebold", which fishes out of New Bedford, Mass. Built at Dorchester, N. J. in 1944, the vessel's net tonnage is 39. She has a 230 hp. Superior Diesel which swings a 44 x 37 Columbian propeller through 3:1 Snow-Nabstedt reduction gear. Her navigating equipment includes Submarine Signal Fathometer and Kaar direction finder, and she has Roebling wire rope, Hathaway winch and uses Gulf fuel oil.

Boston Mackerel Landings Best in Several Years

In June, landings at the Boston Fish Pier totaled 16,292,650 lbs., valued at $1,199,746, or a weighted average price of $7.36 cwt. This was a 6% decrease in volume when compared with May, but a 9% increase over the landings for June, 1950. With the completion of the first half of 1951, landings were 11% above the same period in 1950, but 8% below the total of 97,819,000 lbs. for the first six months of 1949.

Purse seiners had their best month at Boston for the past few years, with sixteen trips yielding a total of 394,800 lbs. of mackerel, all caught in Massachusetts Bay. Indications to date point to the best season for the seiners since 1947. However, this year is still behind normal.

There were 142 trips landed by offshore vessels in June, with an average catch of 80,900 lbs. per trip, compared with 141 trips in May which averaged 99,150 lbs., and 152 trips in June, 1950 which averaged 81,700 lbs. The greater part of the trips in June were to Georges Bank, although those vessels which did fish on the Eastern Nova Scotia banks brought in the largest catches.

Big catches of scrod haddock were made on the Nova Scotia banks, with these fish being caught at a ratio of about 4 to 1 over the large haddock.

Inshore boats landed a total of 382 trips with a catch of 4,807,300 lbs., compared with May when 299 trips yielded 3,280,850 lbs., and June 1950 when 228 trips totalled 2,494,000 lbs. The draggers continued fishing for whiting, with limits of 15,000 lbs. per trip, and 2 trips per week, the general practice at the end of the month.

In general, supplies were moderate, and the demand good during June. Prices averaged slightly below last month for all items, but were higher than last year.

Two Dory Fishermen Rescued

Two exhausted dory fishermen were picked up July 31 from the fog-shrouded sea 45 miles northeast of Portsmouth, N. H., by the Coast Guard cutter *Coos Bay*. Leo Firicano, 35, and Joseph Aiello, 35, both of Boston, were rescued after being adrift in their dory for more than 10 hours.

Firicano and Aiello were among seven crewmen aboard the fishing vessel *Josephine F.*, which had been fishing off Jeffrey Ledge, 52 miles east southeast of Portland. They became trapped in the fog soon after they set out from the larger vessel in their dory. Salvatore Firicano, Boston, brother of Leo and owner of the vessel, requested Coast Guard assistance in the search when he was unable to locate the two men.

Great Lakes Lamprey May Be of Value in Medical Research

Dr. James W. Moffett, chief of Great Lakes Fishery Investigations for the Fish & Wildlife Service, reports that one of the grounds for optimism in the fight against the lamprey is that the creature produces a substance that prevents blood coagulation. If the anticoagulant produced by the lamprey proves valuable in medical research, it would provide a powerful stimulant for the commercial catching of the predator and the resultant reduction of their number, he said.

These opinions were voiced by Moffett before the annual meeting of the Outdoor Writers' Association of America, which was held recently at Escanaba, Mich. Moffett, who has charge of a Federal research project seeking means to control the lamprey, journeyed to Escanaba on the *Cisco*, the new 60' lamprey research vessel.

Besides the recent discovery, other means of controlling the predators show some signs of eventual success, Moffett said. These include attempts to prevent spawning in streams with weirs and electric shocking devices.

Trout Catches Show Improvement

Yields of several species of commercial fish taken from Great Lakes waters have manifested general improvement recently. Catches of lake trout in Lake Michigan waters have been larger, particularly in the Illinois area. Lake trout yields from Lake Superior have been better than many fishermen anticipated, although whitefish takes from the Lake were not quite up to expectations.

In Lake Huron, perch, sucker, carp and whitefish production has improved noticeably, particularly on the Canadian side of the Lake. Lake St. Clair operators have been getting liberal catches of perch-pike species, as well as rough fish and carp.

Lake Erie operators have been catching more yellow pike, carp and white bass, while blue pike, sauger and sheepshead have taken a dip. Other species harvested ranged about average.

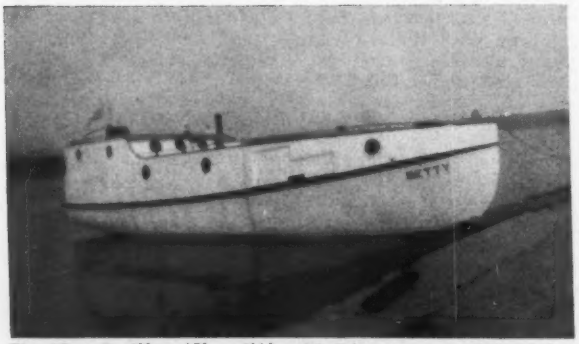
Lake Ontario hauls also ran about average, with spotty fishing conditions.

Raises Fish Tug from River

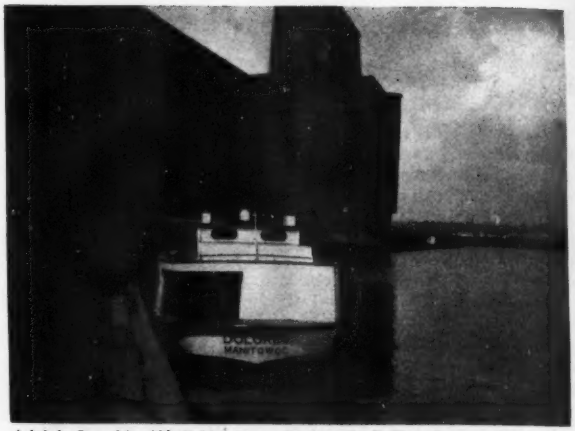
Roen Salvage Co., a subsidiary of the Roen Steamship Co., Sturgeon Bay, Wis., lifted the 64' fish tug *Annabell II* from the bottom of Manistique River recently. The craft had been submerged since last March.

Michigan Catch Increases

Michigan's commercial fish production from the State's jurisdictional waters of the Great Lakes for March and April was 16% over the comparative yield of the same months in 1950, according to the Michigan Conservation Dept.



The "Betty", 42' x 12' x 4½' steel fishing tug owned by Anker Greenfeldt & Sons, Washington Island, Wis. Built in 1945 by Burger Boat Co., Manitowoc, Wis., the vessel is skippered by Capt. Lorman Greenfeldt, and is powered by a 54 hp. Kahlenberg Diesel with 36 x 33 propeller. New Bedford cordage is used, and the tug is painted with Pittsburgh paint.



Adolph Ruzek's 40' fishing tug "Dolores" of Two Rivers, Wis. Her equipment includes 36 hp. Kahlenberg Diesel and Crossley net lifter.

A heavier catch of smelt was responsible for the increased production. Over 3,352,000 lbs. of smelt and other fish were commercially netted, as compared to 2,815,000 lbs. taken in March and April a year earlier.

Carp followed smelt, with fishermen landing 413,000 lbs. About 252,000 lbs. of carp were taken from Lake Huron and 157,000 lbs. from Lake Erie. Chubs came in third with a production of 273,000 lbs., of which 257,000 lbs. came from Lake Michigan.

Lake trout yields were better. Fishermen reported 112,000 lbs., compared to 43,000 lbs. for the period a year earlier. Except for 372 lbs. taken from Lake Michigan, the lake trout catch came from Lake Superior.

Sturgeon Now a Commercial Fish

Michigan fishermen may now take sturgeon of 42 inches or longer from Great Lakes waters. The law for the past 22 years banned the commercial taking of sturgeon in Michigan waters.

Fish Production for Lake Erie

Ohio fish production from waters of Lake Erie for 1950 amounted to 20,224,850 lbs. Compared to the 10-year average of 21,349,950 lbs., the 1950 catch showed a decrease.

Primarily responsible for the decline were the lighter yields of sheepshead and blue pike. Varieties showing substantial increases in production as compared to the 10-year average included catfish, goldfish, suckers, white bass, yellow perch, and yellow pike.

Lake Erie Fisheries Committee

Formation of the "Lake Erie Fisheries Management Committee" was the result of a meeting held in Toledo recently to discuss fisheries problems in Lake Erie. Representatives of New York, Pennsylvania, Michigan, and Ontario, in addition to those from Ohio, attended and will have membership on the committee.

It is expected that the committee will meet annually to promote coordination of fisheries work done on the Lake in relation to commercial and sport fishing, biological lake studies, and water pollution.

Whitefish Catch Improves in Ontario Waters

The April fish catch for Ontario waters showed an increase in whitefish yields amounting to 151,000 lbs., compared to the catch taken a year earlier. The increased catch netted fishermen $24,000 more than last year.

Reward for Marked Trout Doubled

In order to recover more marked trout and encourage fishermen to return them, both the Michigan and Wisconsin Conservation Departments are offering $4 instead of $2 for any marked fish of legal size. The $2 payment, however, will remain in effect for trout which have not attained legal weight.

Fishermen are urged to cooperate, sending Michigan fish to the Institute of Fisheries Research, University Museum Annex, Ann Arbor, Mich., while Wisconsin fish may be shipped to local Wisconsin fish wardens.

Florida's East Bay Suitable For Extensive Oystering

An oyster industry estimated at one and one-half million dollars is lying dormant within a few miles of Santa Rosa County, according to an assertion made by oyster biologists of the University of Miami who have done extensive research in this area.

The waters of Northwest Florida are admirably suited to oyster growing. Oysters in these waters have attained a 4" length in a 31-week growing season.

East Bay, just south of Milton and bounded by Santa Rosa County, is described as an excellent location; one small oyster development is underway there and it is hoped that interest soon will be awakened in developing the many other oyster beds in the locality.

Seek Deepening of Johns Pass Channel

Already grossing more than $500,000 a year, the Gulf Beach's shrimp industry soon may become a million dollar business if the U. S. Corps of Engineers will agree to the appeal of fishermen and other Gulf Beach businessmen to deepen the Johns Pass Channel.

Chas. C. Rice, owner-manager of the Johns Pass Fish Co., pointed out the dredging of the channel would allow larger shrimp boats to make port in Boca Ciega Bay and unload their cargoes. If the channel were only four or five feet deeper, larger boats would be able to use the port.

Want Longer Closed Season for Mullet

A State Conservation agent last month warned that the old Florida standby—mullet and grits—might be a thing of the past if something isn't done to protect the supply of the fish. D. O. Boyer said mullet are fast disappearing off the Florida West Coast just as sponges did a few years ago.

He suggested the Florida Legislature hold a special session, if necessary, to lengthen closed seasons on the fish. The present closed season is from December 10 to January 20. He believes it should be from November 1 to February 15.

Shrimper Destroyed by Fire

The shrimp boat *Capt. Shea*, owned by Herbert Stein, was wrecked by fire last month in Key West harbor. When a squall came up shrimpers in Key West immediately tried to move the boats in the harbor to more protected positions. In attempting to start the engine of the *Capt. Shea*, a short circuit occurred, igniting the boat.

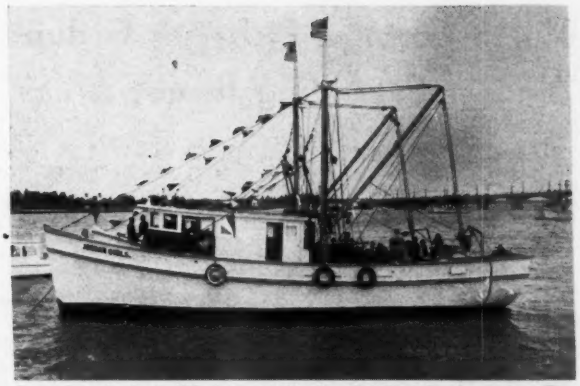
Shrimpers at Key West want a protective jetty so that it will be unnecessary to move the boats every time a strong wind comes up.

Commercial Seining in Fresh Water Banned

In calling a halt to all commercial seining in Florida fresh water, effective August 12, the State Game and Fresh Water Fish Commission also threatened to ban catfish traps unless bootlegging of game fish is stopped. The move was a blow to commercial fishermen's hopes of taking a million-pound annual yield of catfish unwanted in Florida and selling it to the Northern market. If the order is carried out in full, it would leave the fishermen only the multiple-hooked trotline to catch catfish.

Seining operations had been mainly in the St. Johns River and Lake Okeechobee, where controversy between sports and commercial fishermen has been underway for years. Under a new system, fishing crews had been permitted to keep the catfish if they destroyed the predatory "rough fish" and returned such game fish as bass and bream to the water.

However, Commission Director Ben L. McLaughlin said the month-old system of permitting supervised seining in the St. Johns and Lake Okeechobee hadn't brought up enough predatory rough fish to make it profitable for the Commission to keep an agent with each crew. McLaughlin said the Commission would intensify its program of seining to destroy rough fish in Florida fresh water with its own crews and with its own, or leased equipment.



Capt. Sam Jordan's 58' shrimper "Jordan Girls" of St. Augustine, Fla. The vessel is powered by a 165 hp. Diesel with 3:1 Twin Disc reduction gear and Columbian propeller. She uses Esso lubricating oil, and is equipped with Stroudsburg hoist, Linen Thread Co. Gold Medal nets.

Fishermen Leave Flamingo

Flamingo, in the heart of Everglades National Park, is now a ghost town. The last of the 20 to 50 fishermen have moved out and relocated in compliance with a court order.

Some now are fishing at Goodman Point up the coast, where the House Fish Co. has relocated. The Roberts Fish Co. has bought a "run boat" which is a refrigerated, floating barge. This provides employment for several fishermen.

Another run boat also has been put into operation. The run boats collect fish caught off the keys and take them to Tavernier and Jewfish Creek.

After World War II commercial and sports fishing grew to be the town's main industry. Drag seines were used so much that the fish became less plentiful. Then fishermen started hauling live shrimp for use of sportsmen. The park regulations stopped drag seining last year, and these were followed by the Government's declaration of taking the land for a park.

South Carolina Firm Using New Method For Planting of Oyster Shells

A new method of planting oyster shells is being used by L. P. Maggioni of Beaufort. The method was originated by Keith Powers, plant superintendent for Maggioni, and consists of using a large irrigation pump to send a steady stream of salt water through a hose nozzle onto the heaped up oyster shells, scattering them evenly over the surface of the water. The shells are planted from a steel barge which is pushed along the shoreline by a small tug.

The Maggioni plant is using the new method to plant oyster shells from Charleston Harbor to Callibogue Sound south of Beaufort. The pump, capable of generating even higher pressures, ordinarily maintains a steady 100-lb. pressure. The hose nozzle, seated in specially constructed pipe-holders, can be handled by one man who aims the discharge at the oyster shells piled on the barge.

Study Pond-Rearing of Oysters

The Bears Bluff Laboratory has been conducting research into the habits of oysters in South Carolina in the hope of being able to determine the best possible methods of conserving the fast-dwindling supply along the coast. A crop of oysters in a pond at the Laboratory is at the end of a five-year plan, and soon will be the subject of a research report by G. Robert Lunz and his staff.

When the Laboratory was established in 1946 the primary mission was to study the possibilities of raising oysters in impounded tidal waters. By and large, the program has gone well, although it has not been 100% successful.

North Carolina Fisheries Group Against Extending Target Areas

The Commercial Fisheries Committee in session on July 13 at Morehead City passed a resolution requesting Marine officials and Army Engineers to refrain from extending bombing target areas in coastal waters. The group also requested the director of the Board of Conservation & Development to dispose of the State boats *Pamlico* and *Hatteras* as soon as possible. The *Pamlico* is to be sold because it has been found too expensive to operate, and the *Hatteras* is obsolete.

The former regulation preventing night shrimping was suspended until the Spring meeting of the Board, but Sunday shrimping prohibitions were retained. The Committee also recommended, with approval of the Board, that the closed season for shipping clams in the shell be suspended until the next regular meeting.

C. D. Kirkpatrick, law enforcement administrator for the Division of Commercial Fisheries, reported that the shad run was the best in several years; clam and crab production greater than ever before; and that there was an increase in the herring catch. A decrease in the menhaden catch was reported.

The newly-appointed Commercial Fisheries Committee, headed by Mrs. Roland McClamroch of Chapel Hill, undertook work to weed out duplicate fisheries regulations.

Shrimping Improves

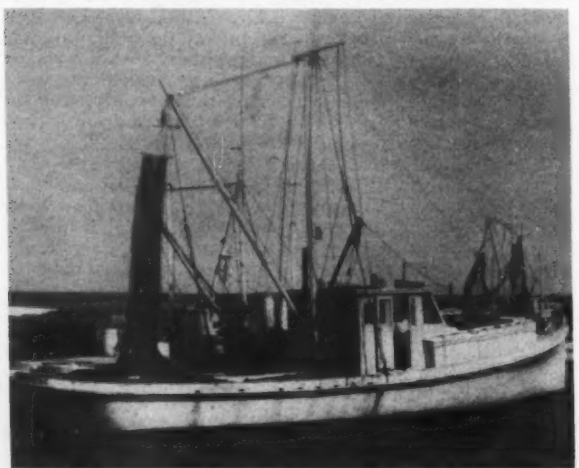
Shrimping operations took a turn for the better early last month, and hauls were at their best since the season opened June 1. Excellent catches were reported in the sounds and better than usual catches in creeks and rivers.

Scientists Study Shad

James Sykes and Burton Lehman, investigators at the Fish & Wildlife Service laboratory at Beaufort, left last month for the Delaware River where they will determine the location and extent of shad spawning areas in relation to proposed construction of large dams.

Work has been completed on adult shad populations in the Connecticut and Hudson Rivers. Tagged in the Connecticut River were 1,900 shad, and in the Hudson 1,700 were marked.

The latest shad tag recovery off Provincetown, Mass. adds strength to the trend indicated by several previous recoveries, that shad from the Connecticut and Hudson Rivers move north along the New England coast after spawning in the Spring and then South again in the Fall.



The 52' fishing boat "Sea King", owned by Ross Salter of Atlantic, N. C., and powered by a 165 hp. Gray Diesel which swings 28 x 20 Columbian propeller through 1.5:1 Twin Disc reduction gear. Other equipment includes Ederer nets and Danforth anchor. Esso fuel and lubricating oil are used, and the vessel is painted with International paint.

Gulf Spring Shrimp Pack Shows Large Increase

The Gulf area has had a considerably larger Spring shrimp pack than last year's heavy production. The 1951 figure for the period April 15 to June 30 is 184,000 cases, against 143,100 last year. Moreover, the Gulf area still is enjoying continued substantial packing for the time of year.

Shrimp catches during early July were comparatively heavy, according to dealers in Patterson, La. The Patterson Shrimp Company's *Gen. Douglas MacArthur*, Capt. Sidney Keller, had 46 barrels and the Versaggi Shrimp Company's *Panther*, Capt. Robert Wiggins, Jr., arrived with 45 barrels.

The *Whirlaway*, owned by General Seafoods, arrived in port last month with 106,000 lbs. gross weight of frozen shrimp caught in Mexican waters. The shrimp were unloaded into refrigerator-trailer trucks which General Seafoods Co. sent to receive the cargo. The vessel was due to leave port again on July 25.

Pat Cheramie, head of the Morgan City Canning Company's main office at Houma, La., said recently that their shrimp trawlers were bringing in good catches of the big "brownies" caught in deep waters off the coast.

The Cheramies freeze and store shrimp and breaded oysters at the Morgan City Freezer & Cold Storage, Inc. The Ho-Ma Brand shrimp and oysters are being widely advertised.

Louisiana Crab Catches Light

Louisiana crab catches have been considered exceedingly light lately, but the quality of the small catch has been unequaled in many years. Packing plants have been getting the bulk of their production from below New Orleans and Houma.

Many of the men who formerly spent their entire time crabbing for retail and fish dock sales, now crab only at night or early in the morning. The rest of their time is devoted to gathering moss which is bringing a good price.

Mississippi Shrimp Strike Settled

A labor controversy was terminated July 9 in Pascagoula, Miss., when two shrimp houses buying from out-of-State shrimpers, and thus not covered by a shrimpers' union price agreement, agreed to unionize their fishing boats and pay union prices. Termination of the dispute followed a three-day work stoppage.

Settlement of the controversy was effected at an open conference in the court house at Pascagoula, presided over by Gov. Fielding L. Wright and attended by representatives of all factions involved. The Governor had announced he would send 500 National Guardsmen to the area to keep fishing operations going if it became necessary to make such a move.

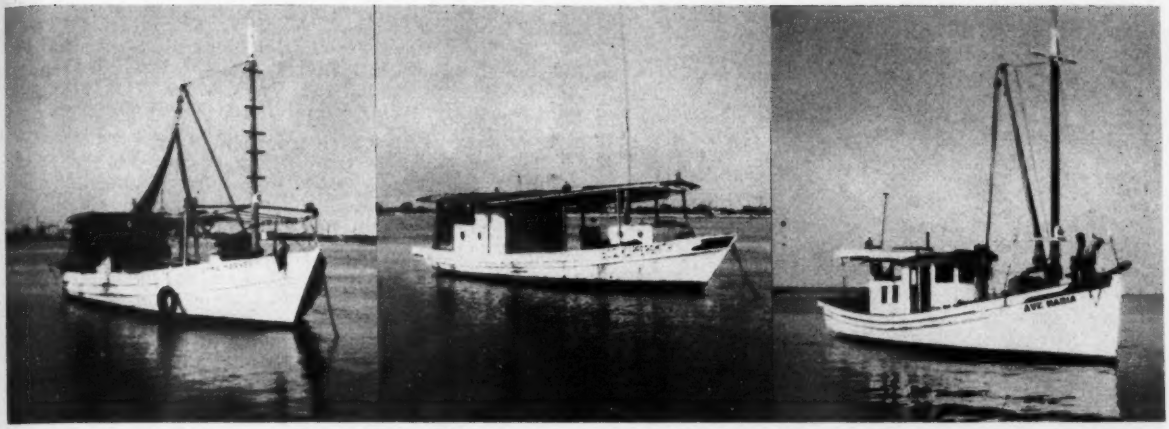
The two shrimp operators whose fishing boats became unionized under the agreement are Oliver Clark, formerly of Louisiana, and Wilson Wharton, formerly of North Carolina.

In summarizing the grievances of the Mississippi shrimpers, Louis Simmons, president of the union, said the Mississippi price was $35 to $50 a barrel, depending on the size of the shrimp, and that Louisiana shrimp fishermen had been selling at $13 to $18 less per barrel.

May Landings Mostly Menhaden

Landings of fishery products at Mississippi ports during May totaled 17,071,750 lbs., or an increase of 16,177,400 lbs. compared with the previous month. The inauguration of the menhaden season was the reason for the great increase in production during May.

Receipts of menhaden totaled 16,185,200 lbs. during the month and accounted for 95 percent of the total landings;



Part of the fleet of shrimpers owned by the Collier Seafood Co., Cedar Point, Ala. From left to right: the 37' "Emma Harvey", equipped with a 55 hp. Caterpillar Diesel; the "Kuppersmith", which has a 68 hp. Buda Diesel; and the 50' "Ave Maria", powered with a 65 hp. Caterpillar Diesel.

shrimp amounted to 489,400 lbs. and accounted for 3 percent; other items made up the remaining 2 percent.

Landings of all species during the five-month period ending with May, totaled 22,711,300 lbs.

Fishing Boat "Cuckin" Burns

The fishing boat *Cuckin*, owned by Tony Martinez, was destroyed by fire July 31. Her operator, Buddy Bosarge, suffered burns to the face and arms following an explosion aboard the vessel as she left the Gulfport, Miss. small craft harbor.

Bosarge related that as the blaze spread he was unable to save the boat and swam to shore. The vessel drifted until it burned to the extent that the hull sank near East Pier.

To Plant Oyster Shells

Plans to plant 60,000 barrels of oyster shells were made at a meeting of the Mississippi Seafood Commission last month on board the patrol craft *Uranus* at Pass Christian. Dr. A. H. Hopkins met with the group and inspected the Mississippi oyster reefs. According to State law, half of all shells coming from the oysters processed in the State are the nontransferable property of the State and must be returned to the reefs.

Alabama Minimum Shrimp Prices

Minimum ex-vessel prices for shrimp acceptable by members of the Mobile Bay Seafood Union, Bayou La-Batre, Ala., were as follows the latter part of July: 1-15 count heads-on brown shrimp—$55.00 per barrel (210 lbs.); 1-20 count white shrimp—$55.00; 16-30 count brown shrimp—$45.00; 21-30 count white shrimp, $45.00; 31-40 count white or brown shrimp—$35.00.

The majority of landings are heads-on shrimp. If heads-off shrimp are landed a barrel is considered to be 125 lbs. Regulations provide for two methods of sharing—the "50% plan" and the "share plan". Generally the former is applicable for the larger size trawlers which operate in outside waters and the latter to the small trawlers operating in inside waters.

Under the 50% plan, ice, fuel, State license, fishing gear and materials for repair of gear are furnished by the boat owner. The crew is responsible for gear repair and food. The State shrimp tax is paid by the original receiver (packer). The owner of the vessel receives 50% and the crew 50% of the value of the catch, with each crew member sharing equally.

Under the share plan, ice and State shrimp tax are paid by original receiver (packer). Food and fuel costs are deducted from total value of the catch (before sharing). One share goes to the boat owner; one share to each member of the crew; and one share for State license, gear and maintenance of same until gear is paid for, then ½ share for gear maintenance. Any accumulated extra funds are divided equally between boat owner and each member of crew.

Collier Seafood Co. — a "Family Affair"

The term "family affair" best describes the Collier Seafood Co., which has plants at Cedar Point and Coden, Ala., and owns four shrimp trawlers. The three Collier brothers, Weldon, William and James, together with a cousin, Mark, run the boats, while their sister, Miss Beaulah Collier, does the buying and selling and is president of the firm.

The Collier Seafood Co. buys from about 20 oyster tongers and 15 outside shrimp boats. Its Cedar Point headquarters are only about 45 minutes from Mobile Bay, Mississippi Sound and the Gulf of Mexico.

Shrimp, oysters and fish (mostly mullet and flounders) are sold by the concern. The shrimp are mainly fresh packed, but some frozen white shrimp and brown shrimp also are handled. The oysters are packed in gallon and pint cans.

The boats in the Collier fleet were among the first to shrimp the new grounds off the Alabama-Mississippi coast. They include the 50' *Ave Maria*, Capt. William Collier, which was built by Toche Bros., Biloxi, Miss., three years ago, and is powered with a 65 hp. Caterpillar Diesel which swings 36 x 26 Michigan propeller.

Another of the Collier shrimpers is the 37' *Emma Harvey*, an old sailing vessel recently rebuilt by Garland Bosarge Boat Works at Bayou La Batre, Ala. Her power plant is a 55 hp. Caterpillar Diesel, and she is skippered by Capt. Weldon Collier. A cousin of the Colliers, Mark, commands the *Kuppersmith*, which has a 68 hp. Buda Diesel. She was formerly a party boat.

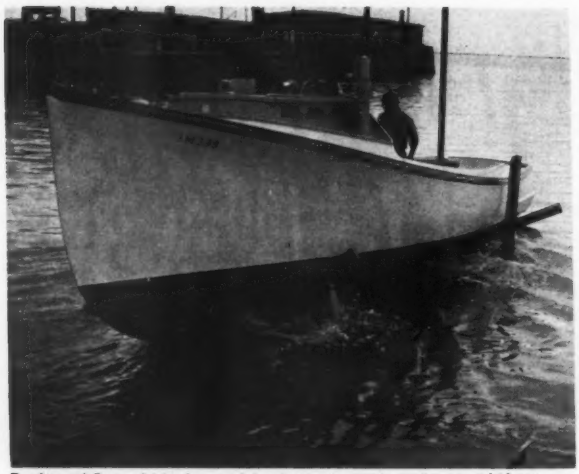
The fourth vessel owned by the Collier Seafood Co. is the *Charles Redding, Jr.*, which is captained by James Collier. Her equipment includes a 65 hp. Caterpillar Diesel and Roebling wire rope. All of the shrimpers in the Collier fleet use Columbian cordage.

June Landings Show Decline

Landings of fishery products at Alabama ports during June totaled 1,324,500 lbs. This was a decrease of 38 percent compared with the landings of the previous month. Shrimp production amounted to 615,450 lbs. and accounted for 46 percent of the monthly receipts.

Oyster yields registered a decrease of 1,235,850 lbs. compared with the previous month. Receipts of crabs recorded a slight increase (4,750 lbs.) during the same period. Finfish landings during June increased 6,850 lbs. compared with the previous month.

Landings of all species during the six-month period ending with June, 1951, totaled 27,556,000.



Ferdinand Day of Monhegan Island stands ready as his new 30' seiner-lobsterman slides down the ways at Gronros Boat Shop, Rockland. Launched the latter part of June after christening by Mrs. Basil Day of Thomaston, the boat has a 145 hp. Nordberg engine with Columbian propeller, is Monel fastened throughout, and has Shipmate stove. Pipe berths for four will be set in during seining season.

Maine Sardine Herring In Short Supply

This year's pack of sardines continued to be negligible up to the early part of August, but packers say there still is a good possibility of a substantial pack. Practically no herring of size suitable for canning have appeared, although there are a lot of small fish and some that are too large.

Total pack to August 1 was only about 5 percent of production up to the same time a year ago. A favorable aspect of the present situation is the opportunity it has given packers to dispose of last year's big pack. As a result, prices have strengthened, some selling as high as $7.25 per case for keyless oils. Ceiling prices of around $8.00 are expected to be reached soon.

Last year, few small fish were evident, which may account for this year's scarcity. The presence of large fish is attributed to last Winter's warm weather which enabled the fish to feed longer than usual and thus grow more rapidly.

There have been two other years when herring were scarce during the early part of the season, in 1918 and 1938. In the latter year, it was the middle of September before any quantity of fish were packed.

New Sea Moss Processing Plant

A new industry for Maine—the processing of sea moss into a stabilizing agent for food, pharmaceutical and industrial products—has started operations. Officials of the Phenix-Pabst-ett Co., a subsidiary of the Kraft Foods Co., revealed that they are about to enter the market for large quantities of moss to be processed at a newly equipped plant on the South Portland waterfront.

About forty people will be employed at the plant, while many others will have an opportunity to earn good wages producing the raw materials on a poundage basis. Purchases will be made from Maine moss gatherers whenever possible, and a company spokesman has suggested that those interested in gathering the growth contact Manager N. R. Pellicani, Bldg. 207, East Shipyard, South Portland.

"Wind" Rockland High-Liner for June

Fish landings at the port of Rockland totaled 6,521,800 lbs. for the month of June, with herring landings at the three sardine plants accounting for 1,332,500 lbs. of the total. General Seafoods' boats brought in 3,039,200 lbs. of the total catch; O'Hara had 1,210,550 lbs.; and Feyler's 939,550.

The *Wind*, Capt. Jim Farrell, was high-liner for the fleet with 453,800 lbs. Second was the *Flow* of General Seafoods, with 429,150 lbs. The O'Hara craft *Villanova* finished third, having a total of 411,450 lbs.

Big Catch from One Tow

Crew members of the O'Hara dragger *Jeanne D'Arc* found approximately 30,000 lbs. of fish in the net when it surfaced after a tow on a recent trip. The catch was one of the largest they had ever seen.

Commissioner Reed Resigns

The resignation of Richard E. Reed as Commissioner of Sea and Shore Fisheries was announced in Augusta on July 13. Reed's retirement is for the purpose of supervising the organization of the sardine industry development program, and he will work for the Maine Sardine Tax Committee and the Maine Development Commission. Reed has been Commissioner since 1946.

Maine's new Commissioner, who took office August 6, is Robert L. Dow of Vassalborough.

Tuna Show Up Early

Bluefin tuna, which arrived off the coast several weeks ahead of schedule and have been seen in great numbers from York to Mt. Desert Island, have been eluding the rod and reel experts. However, the handliners and harpooners are having a field day.

Tom Hacker and Bob Linscott of Bailey Island boated a 750-pounder on handline after a two-hour battle. Off Southwest Harbor William Sinkler of Northeast Harbor harpooned a tuna that tipped the beam at slightly more than 500 pounds. Local fishermen say that Southwest Harbor is the farthest east along the Maine coast that tuna have been seen for many years.

Worm Diggers Subject of Legal Battle

The Maine Law Court will be asked in the Fall to rule whether worms are the property of Maine's citizens or whether municipalities have the right to restrict digging on tidal flats. Upon the court's decision, worm diggers say, may rest the future of a $500,000 industry.

A bill which would have given diggers the right to work in any tidewater area of the State, if they had a State license, was passed by the Senate, but failed of passage in the House.

Zwecker Now Sole Owner Port Clyde Cannery

Samuel Zwecker has announced that he is now sole owner of the Port Clyde Packing Co., Inc., a cannery located at Port Clyde. The firm formerly was known as the Delca Packing Co.

Harris Handling Charts

The Harris Co. of Portland has been appointed Government chart agency. A full stock of hydrographic charts and Coast and Geodetic Survey charts are carried.

Oscar C. Simpson of Criehaven, Me. standing by his new 36' lobsterman which was completed during July by Makinen Brothers Boat Shop, South Thomaston. The boat's cabin is high enough to stand up in, and there is a 132 hp. Lathrop gasoline engine with 22 x 16 Columbian caged wheel running in Goodrich cutless bearing. Other equipment includes Submarine Signal Fathometer, Coleman kerosene stove, stainless steel sink and ice box.

Maryland to Study Oysters In Chincoteague Bay

During the past session of the Maryland Legislature, funds were appropriated for the purpose of studying the hydrography and biology of the waters of the Chincoteague Bay area. This region is especially noted for its production of high quality oysters. Once a thriving industry, the oyster business has declined greatly in recent years. Heavy losses among the oysters and their failure at times to make the desired growth are given as the chief reasons for this decline.

The proposed study will be conducted by the Maryland Dept. of Research and Education. It is designed primarily to discover the factors controlling oyster growth and survival in that area, the possibilities of controlling natural enemies and the effects of variations in the methods of planting and types of seed oysters used.

A biologist in charge of the survey will be permanently stationed on the Bay. Information on the clam population, crabs, fin fish and other organisms also will be gathered.

New Haul Seine Law Misunderstood

A false report has been circulated that the new haul seine law limits the maximum depth of seines to 15′ at the bunt or back of seine, and that the brailles on either end of the seines must be shorter. Actually, the limit is not 15′ but 22′ at the bunt or back.

The length of braille used on either end of the haul seine shall not exceed five hundred yards in length if haul seine is used in the Chesapeake Bay; if haul seine is used in the rivers and tributaries, the maximum length of braille shall not exceed two hundred and fifty yards.

The new law does not become effective until January, 1952, so fishermen can use the same equipment they have in the past this Fall.

Protest Oyster Planting Application

A group of watermen from Chester River and Chesapeake Bay attended a meeting last month in protest of the application of Gilbert Ashley for the leasing of bottoms in Chester River for oyster planting. The application of Mr. Ashley was for a lease of two miles on the Queen Anne's side of Chester River from Indiantown Wharf to Paradise Tree with the exception of Holiday Point.

The point of contention seems to be as to whether the area applied for is or is not barren bottom. Mr. Ashley operates an oyster packing plant in Piney Neck and secures a large proportion of the oysters that he packs from leased bottoms in the Delaware Bay, trucking them to his plant. The area under dispute is not listed as a "natural" oyster bar on the State charts.

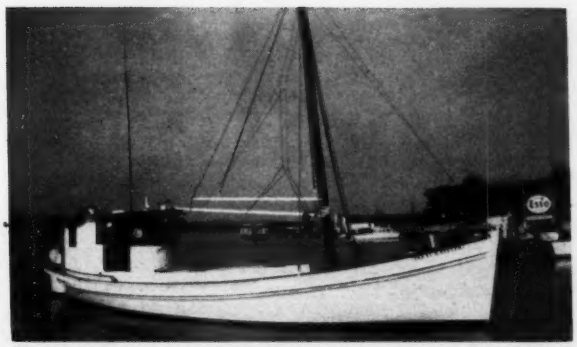
Oyster Seed Area to Be Studied

Scientists of the Chesapeake Biological Laboratory and of the Chesapeake Bay Institute are planning to make an intensive study of the St. Mary's River during the oyster spawning and setting season this Summer.

The River long has been noted for its ability to produce high sets of spat or young oysters. In recent years, the State has put this characteristic habit to practical use through the planting of clean shells on the bottom in order to provide suitable surfaces for the attachment of young oysters. A more complete knowledge of the factors which bring about this high rate of setting would be of great value in locating or developing other good seed areas.

Annual Hard Crab Derby This Month

The Fourth Annual Crisfield Hard Crab Derby and Work Boat Races will be held in Crisfield on August 25. The Work Boat Race Committee, under the direction of Leo Lawson, has made much progress in lining up contestants. Smith Island, Tangier and Deal Island boats have shown much interest in the boat races. Blake Dryden is the head of the Hard Crab Derby Committee, which had received entries from many of the seafood houses as of the middle of July.



Built in 1885 at Crisfield, Md., the 56′ bugeye "Isaac H. Keeler" was converted from sails to gasoline power in 1935. She is owned and operated by G. W. Todd & Sons, Crisfield, and is built of logs. Her equipment includes a Chrysler Royal engine with 3:1 reduction gear, and a 10-watt RCA radiotelephone. Esso gasoline and oil are used.

Virginia Is Studying Types of Bottom Preferred by Oysters

The Virginia Fisheries Laboratory has devised a method whereby oyster producers can make tests to discover why oysters live on certain types of bottom and die on others. They will cooperate with oystermen who wish to try the procedure.

Trays containing a known number of oysters are placed over a bed. Then records are kept of how many oysters die and when the deaths occur. Careful watch is kept to see whether an unusual number of predators or competitors are present.

If oysters die in trays despite good circulation and freedom from predators and adverse bottom conditions, then something is obviously wrong with the water or the oysters themselves.

If the oysters die on the bottom and live in the trays, it suggests something is wrong with the bottom.

Tangier Crab-Packing Houses Busy

Tangier crab-packing houses were shipping 1,000 boxes of soft crabs a week to the markets at Crisfield, Md. the latter part of July. A box holds from 8 to 12 dozen.

Crab-house men are not only packing crabs for market, but also are capturing eels in their pounds. Capt. Carey Crockett, fishing half a dozen eel pots set close to crab floats, catches from 20 to 100 pounds of eels a night. The large ones he ships to the New York markets and receives from 20 to 28¢ a pound, while the smaller ones he sells to Tangier trotliners and potters for 12¢ a pound.

Studying High Summer Oyster Mortality

Biologists at the Virginia Fisheries Laboratory are attempting to learn the causes of the higher death rate of oysters in Summer.

It is urged that local oystermen watch for signs of deaths on their grounds during the Summer. Weak or gaping oysters, with the meat still intact, should be frozen or held in an icebox, and arrangements for delivery to the Laboratory at Gloucester Point should be made as soon as possible.

Clam Digging Good

Tangier clammers are now getting some good yields on the clam beds north of Blue Crab Island in Canaan Cove. They are digging from 500 to 600 to the man, and selling them to the home market for 3¢ apiece.

Hampton Roads Area Landings

Fish landings in the Hampton Roads area during July totaled 710,000 lbs., a drop of 84,000 lbs. from June, and a decrease of approximately 175,000 lbs. as compared to July, 1950. About 90% of the yield was from pound nets. Croaker, which was in top position last month, fell to second during July, having a catch of 169,000 lbs. The leading species was spot, with 203,000 lbs.

New Harbor Radar System Demonstrated at Boston

A NEW harbor radar system, using the world's largest commercial radar antenna, was demonstrated for State, city and port officials at Boston, Mass., last month. The revolutionary installation at Deer Island in Boston Harbor, developed and constructed by Raytheon Mfg. Co. of Waltham, Mass. for the Port of Le Havre, France, was to be given a thorough test before being shipped to France.

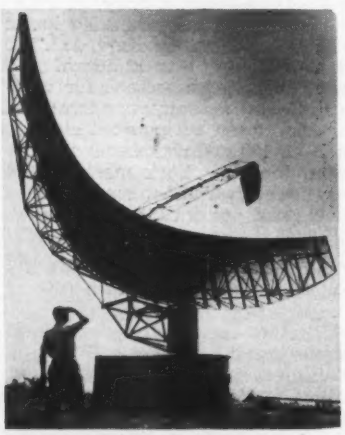
The pilot boat *Roseway*, which carried the guests, was "conned" through the inner harbor by radar experts located at a battery of four 16-inch radar viewing scopes installed atop a former gun casemate at Deer Island, in a practical demonstration of the use of radar in avoiding collisions and groundings under any weather conditions.

The system permits shore-based guidance of shipping entering and leaving a harbor, much the same as GCA, or Ground Controlled Approach Radar equipment used at airports. In addition, the positions of buoys and other navigational aids can be kept under constant scrutiny by port officials, and if they have moved from their chartered positions, shipping can be notified.

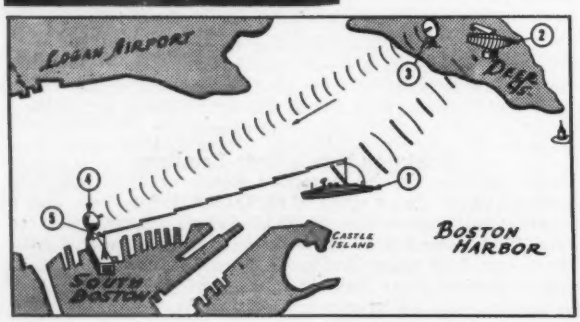
The Le Havre installation, designed specifically by Raytheon for Harbor use, operates on a 10 centimeter band, which is inherently more reliable in conditions of rain, snow or choppy seas which sometimes adversely effect radars of shorter wave length.

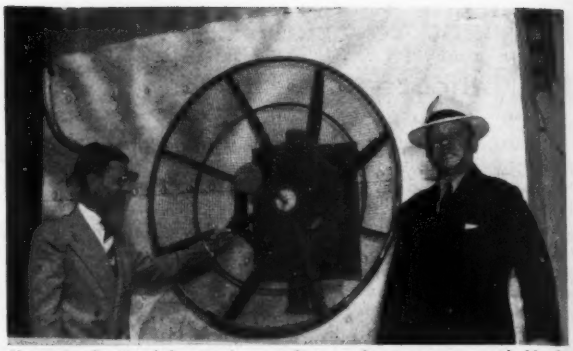
The antenna, which is 41-feet wide and weighs approximately 10,000 pounds, is more than three times larger than any shipboard type radar antenna and provides maximum object definition. This large antenna produces a beam width of only 42 minutes and has a power gain of approximately 10,000.

Since harbor radar equipment is normally installed ashore, the usual shipboard indicator would not be satisfactory because of the enormous wastage of P.P.I. tube space due to land masses. In order to eliminate this, Raytheon has developed an adjustable offset type indicator whereby the land masses can be moved off the screen and the radar station put on the edge of the screen. This has the effect of doubling the usable tube diameter thereby providing greater magnification of objects viewed. The indicator used on the harbor radar system employs 16-inch tubes; thus by offsetting and eliminating unwanted objects the presentation is the same as would be seen on a 32-inch tube.



41' wide antenna used with Raytheon harbor radar system being tested on Deer Island at entrance to Boston harbor. Diagram shows how incoming vessel (1) is picked up by radar scanner at Deer Island (2) the radar picture is transmitted by microwave (3) to microwave receiver at Commonwealth Pier, South Boston (4) where information concerning the vessel's position and progress into the harbor is radiotelephoned (5) to ships.





Kenneth Curtis, left, marine products sales manager, and V. S. Memeyeff, export manager, Raytheon Mfg. Co., and the microwave transmitter of Raytheon harbor radar system demonstrated at Boston.

In the harbor radar system tested at Deer Island, one standard indicator and three offset indicators were employed. The three offset indicators were offset in three different directions thereby producing expanded pictures out toward the sea, in the channel between Deer Island and Long Island, and in the direction of the piers and docks of Boston Harbor. The standard indicator was used to check all directions simultaneously.

In order to keep track of vessels anchored and moving in and out of the harbor, the newly developed Raytheon reflection plotter was employed. This device which employs a semi-mirror, projects a pencil mark from the plotting surface directly onto the P.P.I. tube. By taking fixes on objects at intervals and marking them on the plotting surface, the direction and speed of a vessel can be quickly determined and dangerous situations avoided. Only one person is involved and plots are made directly on the radar image. Plots made on the plotting surface, which is permanent, can be quickly erased.

During the Deer Island tests, a method of transmitting radar information directly to remote points was tried for the first time. It employs a microwave relay link to transmit bearing, trigger and video information to a remote point, which in this case was Boston's Commonwealth Pier. At the Pier a microwave receiver was installed along with the terminal equipment and a standard 16-inch radar repeater indicator. The radar repeater reproduced the picture as seen at Deer Island on any of the six independent ranges included in the equipment.

The Harbor Radar System employs the Raymark Beacon System for identification of specified vessels, as well as specifically designed lubber-lines for obtaining bearings between two vessels and for obtaining fixes when using the special offset indicators.

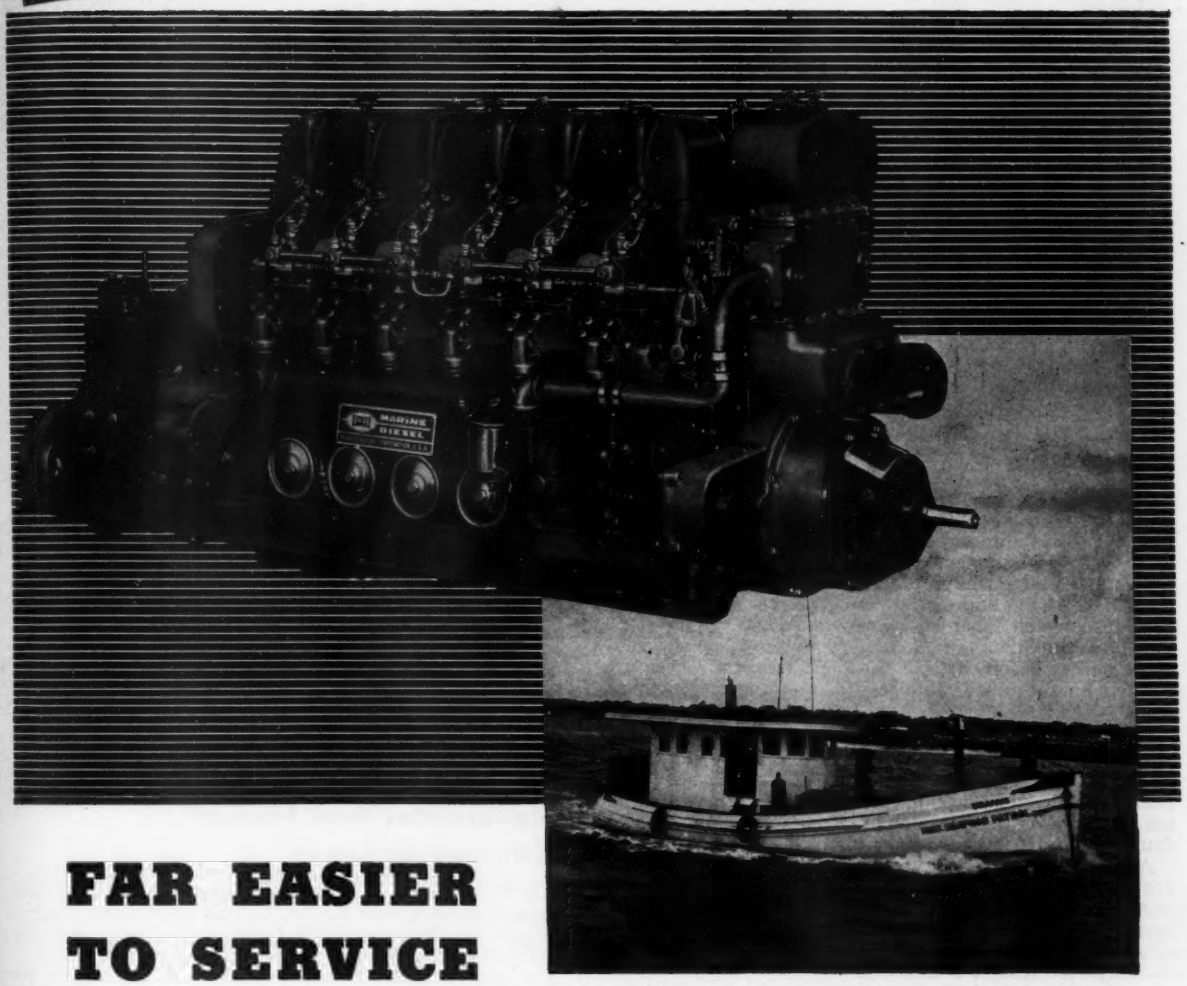
In the way of radar definition, the Raytheon Harbor Radar System provides the finest detail on a plan position indicator. The transmitter employs a selectable pulse length of 2/10 millionth of a second and 6/10 millionth of a second. The short pulse length is used chiefly to obtain finer detail where two closely spaced objects must be separated, whereas the longer pulse length is used when it is desired to see more distant objects.

Georgia Legislators Discuss Fisheries

The State Legislature's Fish & Game Committee met on July 12 at Brunswick and discussed the need for a program to boost Georgia's fishing industry. Packers and Glynn County officials told the visiting legislators Brunswick has become a national center for the frozen seafood industry. But, they reported, a recent survey showed that 93% of the shrimp frozen and packaged locally for shipping come from waters other than those off Georgia.

P&H MARINE DIESELS

2-CYCLE



FAR EASIER TO SERVICE

You will spend more time *fishing* and less time "fixing" when you power with a P&H. Greater simplicity is the reason—far fewer parts than other marine diesels.

The P&H patented cylinder head assembly — which fits all models — can be replaced in only 40 minutes.

Pan removal is unnecessary. All major castings of P&H Marine Diesels are light-weight corrosion-resistant alloys — ending corrosion problems for good.

P&H Marine Diesels are built in rugged 1, 2, 3, 4, and 6 cylinder models up to 145 h. p. Each will give you more dependable and economical service. P&H Diesel Division, Port Washington, Wisconsin.

P&H DIESEL DIVISION
HARNISCHFEGER CORPORATION
PORT WASHINGTON WISCONSIN, U. S. A.

Factory Ships

(Continued from page 18)

dump tank under the main tank. The dump tank also acted as an overflow collection tank when brine was slopped over the sides. Its capacity was sufficient to allow the brine to be lowered to one-half the normal level in heavy weather. The greatest difficulty encountered in operation with any roll or pitch was the spilling of fresh water from the ice cans which diluted the brine, and the spilling of brine into the cans which made them harder to freeze.

Fillet Processing Equipment

Since the *Pacific Explorer* was designed in part to handle large quantities of Bering Sea bottom fish a large fillet line was installed. The bottom fish brought aboard from the trawlers go into fish bins just forward of No. 1 and aft of No. 2 hatches. The bins are conventional and the fish are dumped out of normal fish bin gates on to a conveyor belt which in turn leads into a small water-tight hatch passing through to the shelter deck.

Under this hatch is a chute which conveys the fish into a rotary fish washer. This consists of a rotating screen tilted so that fish introduced at one end are tumbled around and washed by a spray before they pass out at the other end. From the fish washer they are taken up and fed to the top belt of the fillet line.

This fillet line is actually a work-table with spaces provided for 60 men, 30 on each side. It has three belts running down its axis. The top belt brings the raw material along the table, the middle belt takes away the finished product, and the bottom belt removes the offal.

At the end of the line the finished fillets are discharged through a continuous brine dip tank (which has subsequently been found to be unnecessary) and then to packing tables. Here the fillets are taken from the pans in which the filleters have placed them and made up into packages. At the end of the packing table are packaging machines which label and wrap the fillets. From these machines the fillets are placed by hand on to the trays of large dollies designed to fit the blast freezers. These are located on the center line fore and aft on the cannery deck.

Reduction Machinery

The offal belt on the fillet line discharges on to another belt which runs along the side of the ship past a liver-packing table. On this table livers can be removed from the carcasses as they pass along. They are then frozen in drums for further processing ashore.

After the carcasses leave the liver-packing table they are taken through a hog in which they are chopped into small pieces and then discharged into one of two fish offal bins. Both of these bins are provided at the bottom with screw conveyors. These take the offal from the bin and discharge it through a further series of screw conveyors into the reduction plant cooker. This is of normal design.

The cooker itself is a large screw conveyor surrounded by a steam jacket and provided with steam jets. During the progress through this screw conveyor the fish are cooked for the required length of time and then discharged into a press of the screw type, which squeezes the oil and water from the solids.

From the press the liquid mixture is taken through what is termed a "fletcher" machine. This is a basket type centrifuge which effectively separates all the remaining solid ingredients from the liquid.

From the "fletcher" machine several alternative procedures can be followed. A series of four settling tanks are fitted, all with steam jets and heating coils and arranged at different levels so that the oil can gravitate over the top of one settler into the other. In addition a final finishing centrifuge can be used. Alternatively, the tanks and the separator can be used together in any combination, depending on the character of the fish or fish offal from which the oil is obtained.

From the centrifuge or the settling tanks the oil is discharged into the fish oil tanks. From the "fletcher" machine and the press the solid material of the fish is taken by a screw conveyor through a disintegrator which further reduces the particles into small bits, and then into a dryer.

The Dryer

The dryer is the most imposing piece of equipment in the reduction plant. On the *Pacific Explorer* it is 50' long by 72" outside diameter. It rotates slowly and is arranged at an angle so that the meal being fed into the dryer at one end will flow by gravity, tumbling all the while and being dried by contact with steam pipes until it reaches the other end in a dry condition.

Air is introduced into the dryer at the incoming end and the meal is taken out by this air from the other end into a receptacle where a screw conveyor discharges it into a finishing grinder. The finishing grinder further refines the meal and separates any cakes that have formed in the dryer.

From the grinder the meal goes through a fan and cyclone and is dropped from the cyclone into sacking bins on the deck below. The sacking bins are provided with a screw conveyor along the bottom leading into an elevator which, in turn, discharges into the sacking machine. Once the material is sacked it is stored in the open for 48 hours and then piled in the conventional manner.

Headroom a Problem

Neither the salmon canning installation, the crab cannery, the fillet line nor the reduction plant of the *Pacific Explorer* present any particular difficulty to the naval architect, assuming that there is sufficient space available. One problem, which, of course, is common to all ship installations, is that of headroom. It is difficult sometimes for the manufacturers of fish processing machinery to understand that there is actually a clearance problem.

The reduction plant probably requires the greatest amount of attention to detail because of the large number of conveyors. The greatest cause for discussion during the design stages of the reduction plant on the *Pacific Explorer* was the amount of slope to give the dryer. Placed as it was at the stern, the natural sheer of the vessel allowed ¼" slope per ft. when the vessel was on an even keel. It was considered that no difficulty would be encountered in maintaining an even keel due to the relatively large tankage on the vessel and the fact that the cargo could be stored in any hold. A slope of ¼" per ft. was therefore adopted.

Delaware Has New Marine Laboratory at Lewes

A new University of Delaware marine laboratory has been set up at Lewes by Dr. L. Eugene Cronin, marine biologist for Delaware, his business assistant, William Stevenson, and three summer assistants.

The new unit is for scientific research in marine biology of Delaware Bay and the tidewaters of Delaware with an eye toward discovering the cause of the marked decline of marine life over the past few decades.

The immediate problems confronting Dr. Cronin and his staff are an investigation of oyster mortality in Rehoboth Bay, the collection and naming of marine animals common to Delaware waters, and the development of a catch record system. The ultimate aim of the study is the restoration of Delaware fisheries, but the program is not completely set up as yet.

Crew Saved as Boat Sinks

A fishing boat captain and his crew of six were rescued last month by Coast Guard picket boats when their 42-ft boat *Margaret B.* sprang a leak and sank about 3 miles off Lewes while being towed in by a Coast Guard boat. Robert T. MaGinley, skipper, sent distress signals to a nearby fishing trawler when the *Margaret B.* started to leak. The trawler in turn radioed for help.

Coast Guard picket boats from the Lewes and Cape May, N. J. stations went to the aid of the stricken boat. The *Margaret B.* was owned by Delbay Seafoods, Inc., and was used for fishing in the Delaware Bay area.

in WIRE ROPE, too

It's all in the RIGHT KIND of Muscle

The powerful, rugged muscles of a charging rhino enable him to propel his tremendous bulk and weight at truly remarkable speed. Nature designed them well for the purpose they have to serve.

In wire rope, too, the right kind of muscle is vitally important... because different types of jobs present different types of destructive forces. Bending fatigue! Shock stress! Abrasion! Load strain! Each demands wire rope that best combines the required resistance characteristics.

Wickwire Rope gives you the benefit of long experience and specialized know-how which assures you of exactly the right kind of rope your particular job demands.

For additional information write or phone our nearest sales office.

EAST: WICKWIRE SPENCER STEEL DIV.—Boston • Buffalo • Chattanooga • Chicago • Detroit • Emlenton (Pa.) • Philadelphia • New York
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PACIFIC COAST: THE CALIFORNIA WIRE CLOTH CORP.—Los Angeles • Oakland • Portland • San Francisco • Seattle • Spokane

LOOK FOR THE YELLOW TRIANGLE ON THE REEL

WICKWIRE ROPE

CF&I

PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION

Equipment and Supply Trade News

Powersol Diesel Fuel Additive

A Diesel fuel additive, called Powersol D is being marketed by Power Plant Products Co., 93 Federal St., Boston 10, Mass. It is claimed that the use of the product results in more power and smoother performance.

When added to Diesel fuel, Powersol D will clean the entire fuel system from tank to firing point of nozzles or injection. It is made to prevent formation of hard carbon that results in stuck valves and rings. By minimizing wear and corrosion, it prolongs the life of an engine and helps to insure instant starting at any temperature.

Powersol D also can be used as a penetrating oil for removing frozen pistons, for cleaning an engine base while the engine is in operation, and for loosening rusted nuts and bolts. The maker states that it will not injure any metals since it contains no harmful ingredients.

Distributors of Powersol D include Gorton-Pew Fisheries Machine Shop, Gloucester, Mass., and John J. Gobell Co., New Bedford, Mass.

Norlantic Distributing "Western" Gears

Norlantic Diesel, Inc., of New Bedford, Mass. has been made New England Coast distributor of Western Marine Gears, manufactured by Western Gear Works, Lynwood, Calif. Sales and service facilities will be maintained, with a complete parts stock available.

Managed by Jens Ulrichsen, Norlantic Diesel is conveniently located on the waterfront at Greene & Wood Pier, where there is adequate docking space.

The firm has a modernly equipped machine shop and specializes in Diesel engine and fishing boat repairs. They are equipped to service fuel nozzles and fuel pumps and to handle welding, machining, precision grinding and lapping work. Fuel and lubricating oil are available.

Gould Heads New GM Sales Agency

W. C. Gould

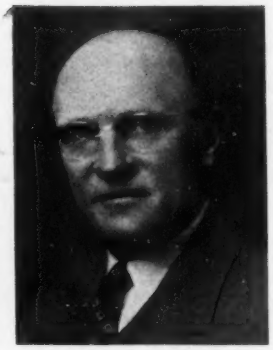
A new sales agency for the distribution of General Motors Series 71 and 6-110 marine Diesel engines has been established in the General Motors Building, 1775 Broadway, New York City, by Detroit Diesel Engine Division.

The sales agency will be under the supervision of W. C. Gould, who has been marine sales manager at Detroit Diesel since 1945. Mr. Gould came to Detroit Diesel from the Allison Division of General Motors and has been with General Motors Corp. since 1941. He is a Mechanical Engineering graduate of Lafayette College, with wide experience in the aircraft and marine engine fields.

The new GM Diesel marine sales agency will serve an area including lower New York State (south of Schenectady), southeastern Connecticut (south of New London) and eastern New Jersey. Detroit Diesel has three marine dealers in this area: West Haven Shipyard, Inc., of West Haven, Conn.; Henry Knese Marine Sales & Service, Inc., Flushing, N. Y.; Diesel Engineering and Equipment Co., Inc., Perth Amboy, N. J.

The new agency will serve as the distributor of engines and parts to these dealers, but will not in itself stock parts or offer engine maintenance and repair service. Owners of GM Diesel engines in this area will procure parts and service from the dealers.

Weber New International Paint President



John W. Weber, Jr.

At a Board of Directors meeting of the International Paint Co., Inc., held at their New York office, 21 West St., John W. Weber, Jr., was elected president. He succeeds the late Arthur Ward, who passed away in May.

Mr. Weber has held a high executive position with the Company for nearly twenty-five years. He has served as the vice-president, assistant treasurer and a director since 1932. He is also the treasurer of the Marine Painters' Association.

Booklet on Apelco Electronic Equipment

Apelco brand marine radiotelephones and direction finders are catalogued in a variety of styles and sizes in a new eight-page folder, Form 351, now available from Applied Electronics Co., 1246R Folsom St., San Francisco 3, Calif.

Five combination transmitter-receivers are listed with normal communication ranges from 50-200 miles to 300-1200 miles and with output powers from 16 to 200 watts. A 50-watt transmitter is shown for applications where a direction finder or separate receiver exists. Such accessories as whip antennas, crystals, extension speakers, and antenna loading coils also are included.

Four models of inside and outside loop direction finders are listed, described, and illustrated. In addition, specification details such as tube complements, channel arrangements, sensitivity, selectivity, operating power, and physical characteristics of all units are tabulated.

Universal Motor Expanding Its Factory

Universal Motor Co., Oshkosh, Wis., manufacturers of marine engines and electric plants, has begun construction on a 112' addition to its already extensive factory. The firm's president, Ralph G. Klieforth, stated that a contract to build seven new 16' bays has been let.

Space needed to fulfill some of the firm's government contracts is the immediate cause for the extension, but "Increased volume in both the marine engine and electric plant fields has made the need for greater factory facilities apparent for some time," Mr. Klieforth stated. "We fully expect that the added operating space will be reflected in our increased ability to serve Universal customers, both in the domestic field, and also abroad, after the defense program levels off."

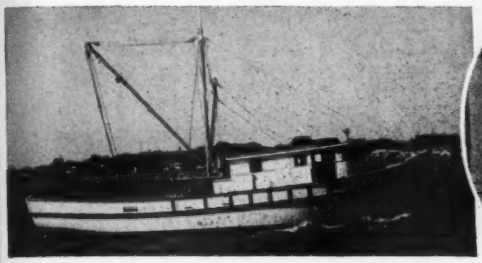
The new factory addition, to be completed early this Fall, includes an extension on one side of the present plant. The Universal Motor Co., which was established in 1898, has been located at its present site since 1928 when the existing plant facilities were constructed.

Surrette Battery Appoints Plant Manager

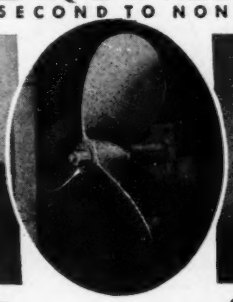
Paul Bishop has been appointed Plant Manager of Surrette Storage Battery Co., Inc., Salem, Mass., relieving John J. Surrette from these duties in order that he may devote more time to administration, sales management, and personal customer contacts. The Company has been expanding its distributor and sales organization to provide adequate sales and service facilities for all fishing centers on the coast.

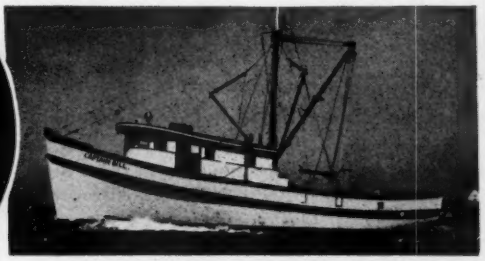
COLUMBIAN BRONZE PROPELLERS

SECOND TO NONE



"Beachcomber" swings a three blade 42" x 32" Columbian Propeller. A Tams design shrimp trawler, 60' x 18', from the D.E.S. yards. At the right, "Beachcomber's" wheel.





60' x 18' Tams design shrimp trawler, "Captain Bill". Owner W. L. Hardee, Brownsville, Tex. Built by D.E.S. 46" x 36" 4-blade Columbian Propeller and Fittings.

STANDARD EQUIPMENT ON TRAWLERS BUILT BY

DIESEL ENGINE SALES CO., Inc., St. Augustine, Florida

Standard, nationally known equipment is used on the well known trawlers built and sold by Diesel Engine Sales Co., Inc. All equipment must have a proved performance record to serve on D.E.S. trawlers which are bigger and more seaworthy to stand the gaff of rough water trawling far off shore. Selected because of their outstanding service to the fishing trade, it is not surprising to find Columbian Propellers and Fittings of the finest quality manganese bronze on the superior built D.E.S. trawlers.

An increasing number of work boat builders and owners specify Columbians

COLUMBIAN BRONZE CORPORATION

FREEPORT • LONG ISLAND • NEW YORK

Barney, Kadlic Promoted by Roebling

James C. Barney

The appointment of James C. Barney as assistant manager of sales for the wire rope division of John A. Roebling's Sons Co. has been announced by E. C. Low, vice-president sales. Mr. Barney's new headquarters are at the firm's home office, Trenton, N. J. He replaces the late George B. Stoess.

Mr. Barney, who has been associated with Roebling for the past 26 years, started as a clerical assistant at the Company's Los Angeles office. In 1947 he was promoted to assistant manager of the Los Angeles district office.

John P. Kadlic has been named Philadelphia district sales manager for Roebling's wire rope division. Mr. Kadlic replaces Vincent L. Daulton, who lost his life in a recent train wreck.

A native of Bellaire, Ohio, Mr. Kadlic attended Kiski Prep School, Saltsburg, Pa., and is a 1935 graduate of Princeton University. Prior to assuming his new duties, Mr. Kadlic was the Company's sales representative in the St. Louis area.

Buda Names Shoemaker Vice-President

Following a recent meeting of the Board of Directors of The Buda Co., Harvey, Ill., announcement was made of the appointment of L. F. Shoemaker as vice-president of the Company.

Mr. Shoemaker, or "Shoe" as he is known to his friends,

You're in "Immediate Touch"

with Raytheon

RADIOTELEPHONE

Powerful, compact, easy to install, a Raytheon radiotelephone enables you to talk ship to shore, Coast Guard and other vessels . . . adds safety and pleasure to boating. Models available for every service.

FATHOMETER* JR.—indicating or recording models. Shows water's depth . . . warns of underwater dangers . . . finds fish.

Ask any authorized Raytheon marine dealer about the easy payment plan. Write for details.

*Reg. U. S. Pat. Off.

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IT ISN'T A FATHOMETER IF IT ISN'T SUB. SIG.

first became associated with The Buda Co. 31 years ago. His long career with the firm has included positions in service, new engine field test, retail sales and manufacturers sales departments. He has served many years as regional representative and in distributor and branch retail sales. For the last 12 years, he has been in the executive sales capacity as manager of the Industrial Engine Sales Division and then as engine sales manager.

New Nordberg Supairthermal Engine Increases Diesel Rating, Capacity

A culmination of over six years of research and development, the Supairthermal engine, recently introduced by Nordberg Mfg. Co., Milwaukee 7, Wis., has the ability in any given size to produce one-third more horsepower output that the conventional supercharged engine. This achievement is considered notable among the advances made in increasing the rating and capacity of Diesel engines. The new engine is available in a complete range of sizes from 425 to 3200 bhp.

The Nordberg Supairthermal engine bases its increased efficiency on a well known principal of thermodynamics —the lower the temperature of the air in the cylinder at the time the fuel is injected, the greater the amount of fuel that can be burned, and the higher the horsepower output without increasing peak temperatures or pressures. Using the "Miller System of Supercharging", the Supairthermal engine improves upon the conventional turbocharged engine in four ways:

First, a greater amount of air cooling within the cylinder is accomplished by blowing a larger volume of cooler air through the cylinder and out the exhaust pipe.

Second, the turbocharger delivers air to the cylinder at a higher pressure, thus providing 30 per cent more weight of air and making it possible to burn more fuel.

Third, by means of an intercooler on the discharge side of the turbocharger, the temperature of the intake air is cooled before it enters the cylinder.

Fourth, by closing the intake valve before the end of the intake stroke, the air within the cylinder is expanded from 15 lbs. pressure to 6 lbs. pressure, at full load and the intake air is thereby cooled another 50°F.

The turbocharger used with the Supairthermal engine is driven by the exhaust gas and requires no power from the engine. At rated full load, it delivers air to the intercooler at 15 lbs. pressure. Because of this compression within the turbocharger (from atmospheric pressure to 15 lbs. pressure), the air temperature increases about 160°F. But the intercooler cools the air to within 10°F. of the cooling water temperature. With 90°F. cooling water, the air enters the engine cylinders at 15 lbs. pressure and 100°F.

The point at which the intake valve closes during the intake stroke is automatically controlled by the pressure in the intake air manifold. For example, with a 15 lb. manifold pressure, which is normal at full rated load, the intake valve closes 45° before the end of the intake stroke. This is an important difference between the Supairthermal cycle and that of the conventional supercharged engine where the intake valve remains open until the end of the intake stroke. The air in the cylinder is expanded from 15 lbs. pressure to 6 lbs. pressure as the piston continues downward to the end of the stroke. Because of this expansion, the temperature drops from 100°F. to 50°F. As the manifold pressure decreases at part loads, the intake valve closes later so that the air pressure at the beginning of the compression stroke remains 6 lbs.

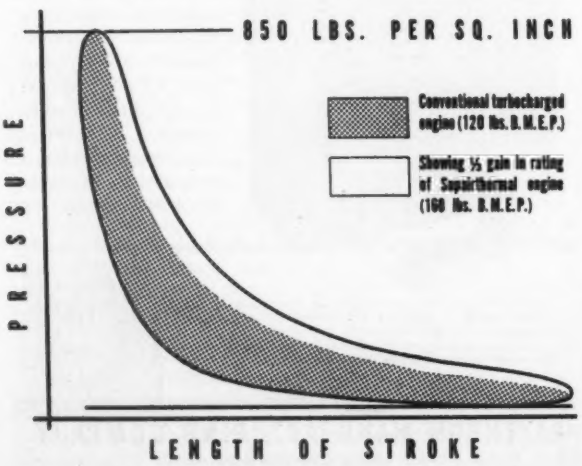
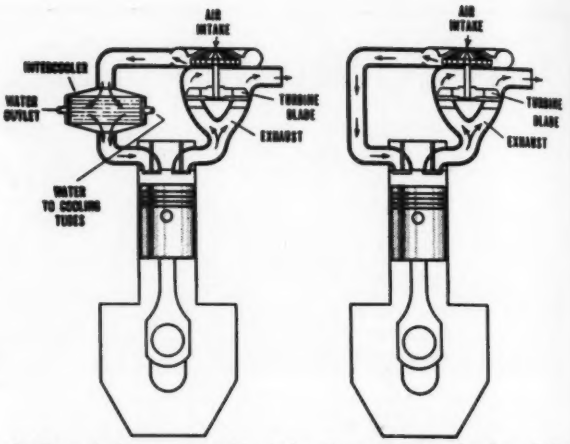

850 LBS. PER SQ. INCH
PRESSURE
Conventional turbocharged engine (120 lbs. B.M.E.P.)
Showing ½ gain in rating of Supairthermal engine (160 lbs. B.M.E.P.)
LENGTH OF STROKE

Diagram showing changes in pressure and volume within the cylinders of the conventional turbocharged engine and the Nordberg Supairthermal engine.



At the end of the compression stroke, the combustion chamber of the Nordberg Supairthermal engine, left, contains 30% more weight of air than conventional supercharged engine. Temperature is 792° F. and pressure, 648 lbs. The combustion chamber of the conventional engine, right, contains air at 1010° F. and 580 lbs. pressure.

At light loads where the intake manifold pressure is 6 lbs. or less, the closing of the intake valve is fully retarded and the pressure and temperature at the beginning of the compression stroke is the same as in the intake manifold after the intercooler.

With the increase in power, the Supairthermal engine has greater thermal efficiency, more power in less space, more horsepower per gallon of fuel, more horsepower hours per gallon of lubricating oil, less weight per horsepower, and less heat loss to the water jackets.

List of Ports with Socony Service

Close to 400 world ports where Gargoyle marine products can be obtained by the marine trade are listed in a revised semi-annual publication now being distributed by the marine sales department of the Socony-Vacuum Oil Company, Inc., 26 Broadway, New York 4, N. Y. Included in the booklet are 10 ports added during the past year.

The names, addresses, telephone numbers and cable addresses for both company-operated offices and distributors are listed alphabetically in the booklet.

Omar B. Whitaker

Omar B. Whitaker, manager of marine sales for Sperry Gyroscope Company, Great Neck, N. Y. died August 1. He had been with Sperry for 37 years.

Mr. Whitaker was widely known in naval and maritime circles and an active participant in all maritime activities. His memberships included service as past President of the Propeller Club of the United States, Treasurer of the Society of Naval Architects and Marine Engineers since December 1, 1949, member of the Board of Governors of the Propeller Club Port of New York, member of the Board of Visitors of the New York State Maritime College, member of the Board of Governors of the Society of Naval Architects and Marine Engineers.

New England Coast Distributors

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Sales — Service — Complete Parts Stock

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Fuel Nozzles • Fuel Pumps • Welding • Machining • Precision Grinding • Lapping

Fuel and Lubricating Oils

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Jens Ulrichsen, Manager

Green & Wood Pier
New Bedford, Mass.

Telephone 4-2307
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PACIFIC-WESTERN GEAR PRODUCTS

Connecticut Oysters Spawning

Observations made the latter part of July by the Milford Fish & Wildlife Service Laboratory showed that approximately 22% of the oysters examined already were completely spawned. The majority, however, still constituting 66% of the population, were in different stages of spawning, while 12% were ripe but not spawning.

Completely spawned oysters were most common in the New Haven district. The Bridgeport area samples contained no spawned-out oysters.

Setting of oysters continues but is extremely light. Starfish setting also is underway, but is very light and not of a general nature.

Norwalk Lobstering Good

The lobster season so far has been good in the Norwalk area. Some of the lobsters caught have weighed 3 and 4 pounds each. Bait used in the traps consists of skates, flatfish and sea robin trucked in from New Haven.

Two Vessels Repowered

The *Austin W.*, a fishing boat owned and skippered by Capt. Andy Soos of Bridgeport, has been hauled out at the Hitchcock Gas Engine Co., Bridgeport, to prepare her for repowering. The Company has put in a new Monel shaft and a 4-blade Columbian propeller. As soon as she is ready, Wolverine Motor Works, Bridgeport, will install one of their 200 hp. Diesels at their plant.

F. Mansfield & Sons, Inc. of New Haven have just repowered one of their oyster boats, the 70' *Americus*, with a 240 hp. General Motors Diesel with 4:1 hydraulic reverse and reduction gear. The engine was installed by West Haven Shipyard at West Haven.

A Twin Disc front power take-off has been installed to run the Hitchcock hoister, and a 100 hp. Buda Diesel will drive a centrifugal pump of 1000 gpm. for flushing oysters off deck. Skipper of the *Americus*, which has a capacity of 2500 bushels, is Eugene Cardorath of New Haven.

STARR NETTING DOES 2 THINGS

1. CATCHES and HOLDS YOUR FISH.

2 GIVES YOU LONG, DEPENDABLE SERVICE.

And that's exactly why profit-conscious fishermen look to STARR for their netting. They just can't afford to risk their "catch" with inferior netting.

For over 50 years, Starr's ability to make only the finest quality Gill and Seine netting—strong and lasting—has been reflected in the confidence of their many satisfied customers.

Nylon Netting available in a wide variety of sizes.

Write for information today

STARR NETTING—
STAR PERFORMANCE

STARR NETS

A. M. STARR NET CO.
EAST HAMPTON · · · CONN.

For any marine purpose . . .

CHRIS-CRAFT MARINE ENGINES

. . . are the world's best buys!

Model B, 60 h.p. Model K, 95 h.p.

Model KL, 105 h.p. Model KBL, 131 h.p.

Model M, 130 h.p. Model ML, 145 h.p.

Model MBL, 158 h.p. Model W, 160 h.p.

RUGGED Chris-Craft Marine Engines are specially built for marine use. Year after year, they provide superb performance, are economical, dependable, trouble-free. Chris-Craft Marine Engines are available in 60, 95, 105, 130, 131, 145, 158 and 160 h.p. Reduction drives and opposite rotation available for most models. For any marine use, your best marine-engine buy is Chris-Craft!

READ WHAT USERS SAY!

Luis Patron

"I have installed Chris-Craft Marine Engines in my fleet of fishing boats, which I own and operate here in Mazatlan," writes Luis Patron, Mazatlan, Sinaloa, Mexico. "My boats go out every day, 9 hours daily, for 5 or 6 months out of the year. I want to congratulate you on the excellent performance and lasting qualities of your engines. I am so satisfied, I wouldn't consider using anything but Chris-Craft Marine Engines in my future boats."

Fishermen! Chris-Craft Marine Engines can stand the gaff of tough, commercial operation and give you economical, trouble-free service! Ask your marine dealer, boat yard or boat builder for data, or write for FREE catalog.

Chris-Craft

MARINE ENGINE DIVISION

CHRIS-CRAFT CORPORATION, ALGONAC, MICH.

WORLD'S LARGEST BUILDERS OF MARINE PRODUCTS

Fish Landings

For Month of July

Hailing fares. Figure after name indicates number of trips.

GLOUCESTER

Alden (2)	94,000
Aliburton (1)	12,000
American Eagle (7)	177,000
Angie (1)	20,000
Anna Guarino (6)	91,000
Ann & Marie (9)	99,000
Annie (7)	111,000
Annie II (8)	61,500
Anthony & Josephine (5)	148,000
Assertive (1)	145,000
Atlantic (3)	199,000
Avocet (1)	15,000
Baby Rose (2)	245,000
Barbara C. (7)	109,000
Benjamin C. (2)	380,000
B. Estelle Burke (2)	125,000
Bethulia (1)	16,000
Billie B. (2)	18,000
Bobby & Jackie (2)	245,000
Bonaventure (1)	165,000
California (4)	88,500
Capt. Drum (3)	130,000
Cara Cara (2)	296,500
Carlo & Vince (6)	114,000
Carol Ann (2)	290,000
Catherine (8)	92,000
Catherine Amirault (1)	170,000
Catherine L. Brown (1)	160,000
Cavalier (1)	30,000
Cavalry (1)	23,000
Chanco (3)	435,000
Charlotte M. (2)	270,000
Chebeague (7)	117,000
Cherokee (2)	145,000
Cigar Joe (6)	78,000
Columbia (2)	370,000
Conquest (2)	292,000
Curlew (1)	165,000
Dale (5)	60,000
Dartmouth (2)	206,000
Dawn (8)	106,000
Dolphin (2)	255,000
Doris F. Amero (3)	173,000
Doris H. (6)	83,000
Edith L. Boudreau (2)	203,000
Eleanor (5)	79,000
Eleanor Mae (6)	86,000
Emily Brown (2)	335,000
Eva II (8)	87,500
Eva M. Martin (2)	19,000
Evelina M. Goulart (2)	154,000
Falcon (8)	159,000
Felicia (2)	445,000
Florence & Lee (1)	160,000
Frances R. (6)	162,000
Francis L. McPherson (2)	310,000
Frankie & Jean (5)	95,000
Frankie & Rose (3)	63,000
Frederick H. (3)	100,000
Gertrude E. (8)	68,000
Golden Eagle (2)	276,000
Hazel B. (1)	125,000
Hilda Garston (1)	150,000
Holy Family (2)	255,000
Holy Name (3)	39,500
Hustler (3)	125,000
Ida & Joseph (3)	61,500
Immaculate Concept'n (6)	128,000
Irma Virginia (6)	109,000
Isabelle J. II (1)	8,000
Jackie B. (3)	168,000
Jackson & Arthur (4)	90,000
J. B. Junior (8)	184,000
Jean & Patricia (2)	16,000
Jennie & Julia (2)	58,000
Jennie & Lucia (1)	57,000
Johnny Baby (8)	112,000
Jorgina Silveira (2)	68,500
Joseph & Lucia (2)	300,000
Joseph S. Mattos (2)	183,000
Josie II (7)	173,000
Julie Ann (1)	175,000
Killarney (2)	403,000
Kingfisher (2)	435,000
Kurta (1)	2,500
Lady of Good Voyage (2)	201,000
Lassgehn (3)	25,000
Linda B. (5)	125,000
Little Flower (8)	188,000
Little Joe (6)	91,000
Lois T. (5)	116,500
Lone Ranger (2)	7,000
Lorine III (2)	48,000
Louise (2)	285,000
Lou Sam (1)	15,000
Madame X (7)	164,000
Madonna (1)	40,000
Malolo (3)	287,000
Manchanock (2)	141,000
Manuel F. Roderick (2)	208,000
Margie & Roy (7)	32,000
Margie L. (6)	136,000
Maria Immaculata (9)	222,000
Marie & Winifred (2)	125,500
Marie H. (2)	36,000
Marion & Alice (2)	200,000
Mary (5)	78,000
Mary Alice (1)	12,000
Mary & Josephine (2)	380,000
Mary E. (6)	71,000
Mary F. Curtis (1)	142,000
Mary Jane (3)	427,000
Mary Rose (1)	140,000
Mary W. (2)	92,000
Mayflower (10)	137,000
Mellena II (1)	12,000
Michael G. (1)	6,000
Michale F. Dinsmore (2)	155,000
Mocking Bird (3)	350,000
Mother Ann (2)	390,000
Nancy F. (3)	50,000
Natale III (7)	138,000
Natalie B. (1)	7,500
North Sea (4)	332,000
Novelty (8)	104,000
Nyanza (2)	23,000
Nyoda (7)	148,000
Olivia Brown (2)	139,000
Paul Howard (2)	280,000
Pauline M. Boland (1)	65,000
Philip & Grace (1)	125,000
Phyllis & Mary (7)	140,000
Pilgrim (2)	320,000
P. K. Hunt (2)	212,000
Pluck (3)	310,000
Pollyanna (2)	328,000
Positive (2)	290,000
Priscilla (2)	9,000
Providenza (7)	32,500
Puritan (2)	300,000
Raymonde (2)	148,000
R. Eugene Ashley (2)	50,000
Rita B. (1)	70,000
Roma II (4)	3,500
Romerly (4)	33,000
Ronald & Mary Jane (2)	325,000
Rose & Lucy (4)	62,000
Rosemarie (2)	73,000
Rose Mary (5)	75,000
Rosie & Gracie (2)	67,000
Rosie C. (3)	28,000
Sacred Heart (5)	86,000
Salvatore (4)	36,500
Salvatore & Grace (2)	95,500
Sandra Lee (1)	10,000
Santa Antonino (3)	39,000
Santa Lucia (7)	113,000
Santina D. (3)	67,000
Sarah M. (5)	57,000
Sea Queen (3)	205,000
Sebastiana C. (3)	51,000
Serafina (1)	22,000
Serafina II (6)	152,000
Serafina N. (6)	145,000
Skilligolee (3)	158,000
Sol (1)	70,000
South Sea (2)	105,000
St. Anthony (1)	160,000
St. John (7)	104,000
St. Joseph (6)	166,000
St. Mary (7)	162,000
St. Nicholas (1)	185,000
St. Peter (3)	65,000
St. Peter II (2)	317,000
St. Providenza (7)	102,000
St. Rosalie (1)	28,000
Sunbeam (3)	180,000
Sunlight (1)	203,000
Superior (2)	208,000
Sylvester Whalen (2)	325,000
The Albatross (1)	135,000
Theresa M. Boudreau (1)	155,000
Tina B. (1)	107,000
Trimembral (6)	100,000
Uncle Guy (2)	95,000
Viola D. (6)	164,000
Virginia Ann (7)	169,000
Western Explorer (2)	36,000
We Three (6)	180,500
White Owl (7)	79,000
Whitestone (3)	170,000

STONINGTON, CONN.

Alice II (1)	700	Laura (13)	4,000
America (16)	47,100	Lindy (12)	14,500
Bette Ann (9)	15,600	Lisboa (15)	28,700
Betty Boop (11)	23,800	Marise (11)	14,700
Carl J. (2)	9,400	Mary H. (14)	20,100
Carol & Dennis (2)	6,600	Old Mystic (18)	69,500
Carolyn & Gary (15)	36,500	Our Gang (1)	14,300
Connie M. (13)	42,000	Pvt. Frank Kessler (2)	4,400
Eleanor (10)	11,200	Rita (1)	200
Fairweather (10)	24,600	Russell S. (9)	58,200
Fatima (10)	1,600	Stormy Weather II (4)	13,500
Five Sisters (3)	11,300	St. Peter (15)	13,900
Harold (11)	13,900	Theresa (6)	23,100
Irene & Walter (15)	69,300	Vagabond (12)	20,800
Jane Dore (10)	16,700	William B. (19)	80,500
Kwasind (2)	1,200	Wm. Chesebrough (7)	45,100

NEW BEDFORD

Adventurer (6)	102,500	Joan & Ursula (2)	74,400
Alva (2)	8,700	John G. Murley (2)	136,500
Alva & Estelle (1)	15,800	June Bride (4)	71,700
Anna C. Perry (3)	35,700	Junojaes (3)	95,500
Annie M. Jackson (1)	12,300	Kelbarsam (3)	44,100
Arnold (4)	43,800	Lera G. (2)	33,900
Arthur L. (4)	132,900	Liberty (1)	17,000
Automatic (2)	23,500	Lt. Thomas Minor (3)	12,100
Barbara M. (3)	64,200	Madeline (3)	15,300
Barracuda (2)	12,500	Maria-Julia (1)	14,500
Bernice (1)	6,500	Mary A. (1)	3,000
Betsy C. (1)	2,600	Mary & Joan (1)	37,600
Cape Cod (2)	28,800	Mary J. Hayes (2)	103,200
Capt. Deebold (4)	86,500	Mary-Jo (3)	17,200
Carl Henry (2)	87,900	Mary M. (1)	9,700
Carol & Dennis (1)	12,200	Minnie V. (4)	36,300
Catherine T. (1)	68,000	Molly & Jane (2)	42,600
Chas. E. Beckman (4)	51,800	Paolina (4)	177,500
C. R. & M. (2)	46,200	Pauline H. (2)	129,400
Dauntless (4)	80,300	Phyllis J. (5)	27,200
Dorothy (2)	4,100	Plymouth Belle (5)	77,300
Driftwood (4)	26,600	Princess (2)	48,900
Ebenezer (3)	11,800	Rosemarie V. (4)	138,600
Edith (2)	29,700	Sea Fox (6)	101,900
Elva & Estelle (2)	52,300	Sea Hawk (3)	87,200
Elva L. Beal (2)	19,200	Serafina (4)	15,300
Etta K. (5)	71,100	Shannon (4)	82,000
Eugene & Rose (1)	37,700	Solveig J. (3)	107,100
Eunice-Lilian (3)	117,500	Sonny & Joyce (2)	7,300
Gannet (3)	187,500	Sonya (3)	41,300
Gladys & Mary (3)	154,100	Stanley B. Butler (4)	237,800
Growler (4)	119,400	St. Ann (3)	100,800
Harmony (4)	40,100	Susie O. Carver (4)	30,300
Helen B. (3)	68,700	Teresa & Jean (3)	144,300
Hope (4)	44,100	Theresa (2)	10,700
Hope II (3)	51,100	Three Pals (4)	55,700
Huntington Sanford (3)	37,700	Two Bros. (N.B.) (5)	27,000
Idlewild II (3)	7,200	Two Bros. (R.I.) (3)	53,500
Invader (3)	68,700	Venture 1st (2)	58,500
Ivanhoe (4)	115,900	Victor Johnson (3)	82,000
Jacintha (1)	45,300	Viking (4)	45,500
Janet Elise (3)	10,800	Viking (N.B.) (2)	83,700
Jennie M. (1)	3,000	Whaler (3)	126,300
Jimmy Boy (1)	19,300	Winifred M. (1)	6,200
Joan & Tom (6)	94,100		

Scallop Landings (Gallons)

Abram H. (3)	3,375	Liboria C. (2)	2,080
Agda (2)	2,150	Linus S. Eldridge (3)	3,280
Alpar (3)	3,457	Louis A. Thebaud (3)	3,375
Amelia (3)	3,410	Lubenray (3)	3,375
Antonina (2)	2,110	Malene & Marie (3)	3,498
Antonio (1)	1,025	Marie & Katherine (2)	2,050
Barbara (3)	3,146	Marmax (2)	2,332
Bobby & Harvey (2)	2,250	Martha E. Murley (1)	1,025
Bright Star (2)	2,250	Mary & Julia (2)	2,330
Camden (3)	3,075	Mary Ann (1)	1,125
Carol & Estelle (2)	2,250	Mary Anne (2)	2,321
Catherine & Mary (2)	2,250	Mary Canas (1)	1,125
Charles S. Ashley (1)	1,169	Mary E. D'Eon (3)	3,441
Charlotte (1)	725	Mary R. Mullins (2)	1,775
Christina J. (2)	2,050	Mary Tapper (2)	2,180
Dagny (2)	2,050	Moonlight (3)	3,375
Doris Gertrude (2)	2,291	Nancy Jane (2)	2,250
Dorothy & Mary (2)	1,866	Newfoundland (3)	3,375
Eleanor & Elsie (3)	3,375	Palestine (1)	1,166
Elizabeth N. (2)	2,250	Pearl Harbor (2)	2,291
Empress (3)	2,550	Pelican (2)	2,250
Ethel C. (2)	2,069	Porpoise (3)	3,375
Fairhaven (3)	2,432	Red Start (3)	3,350
Falcon (2)	1,700	Sea Hawk (2)	2,250
Flamingo (3)	3,150	Sea Ranger (3)	3,405
Fleetwing (3)	3,416	Smilyn (1)	1,125
Francis J. Manta (2)	2,286	Sunapee (1)	1,125
Friendship (2)	2,250	The Friars (3)	3,375
Gambler (1)	750	3 & 1 & 1 (1)	675
Gloria F. (2)	2,280	Ursula M. Norton (3)	3,405
Janet & Jean (3)	3,275	Virginia & Joan (2)	2,069
Jerry & Jimmy (3)	3,375	Vivian Fay (3)	3,375
Josephine & Mary (3)	3,505	Wamsutta (2)	2,250
Julia K. (1)	650	Wm. D. Eldridge (2)	2,250
Kingfisher (2)	2,250	Wm. H. Killigrew (2)	2,286
Lainee K. (1)	1,025		

Swordfish Landings (No. of Fish)

Anastasia E. (1)	25	Jennie M. (1)	3
Black Hawk (1)	3	Sonny & Joyce (1)	2
Bozo (1)	14		

NEW PROOF
How much will your anchor hold, skipper?
THAT
"DANFORTH ANCHORS HOLD BEST"
The U. S. Navy and British Admiralty adopted the Danforth Anchor after hundreds of tests . . . yet Danforth continues to have all types compared under service conditions by impartial engineers. The latest test results are given in our folder "TD" — write for it! Both tests and actual experience show that DANFORTH ANCHORS HOLD BEST . . . HANDLE EASIEST . . . TAKE HOLD INSTANTLY . . . COME UP EASILY AND CLEAN on a vertical pull. It's time to get your DANFORTH now!
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PURRS
WITH CONTENTMENT...
Slip on a FEDERAL
TRU-PITCH
PROPELLER
You'll be amazed at the way these precisely built, perfectly balanced wheels reduce vibration, increase engine effectiveness and lower fuel bills. Moreover, they are cast from extra-heavy patterns, of tougher more corrosion-resistant metal, which means they'll last far longer than ordinary wheels. It will pay you to try one.
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PERKINS-MILTON CO.

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BOSTON

Acme (8)	112,100	Little Sam (6)	92,900
Addie Mae (9)	126,000	Lone Ranger (1)	12,000
Adventure (3)	256,400	Lorine III (1)	28,300
Agatha & Patricia (3)	116,100	Lucky Star (3)	243,600
Alden (2)	42,000	Lynn (3)	316,700
Alphonso (8)	112,000	Mabel Mae (3)	200,700
Angie & Florence (3)	53,300	Madonna De Trapanni (8)	100,100
Annie & Josie (8)	113,500	Maine (3)	360,100
Arlington (3)	332,000	Margaret Marie (6)	85,600
Assertive (1)	50,100	Mara Christina (9)	42,500
Atlantic (3)	304,900	Maria Del S. (9)	125,300
Ave Marie (Dragger) (8)	114,300	Marietta & Mary (4)	101,000
Barbara C. Angell (3)	324,600	Maris Stella (3)	196,800
Bay (2)	181,000	Marjorie (4)	53,400
Bonnie (3)	396,000	Marjorie Parker (1)	46,000
Bonnie Jean (Gill N'r) (2)	1,000	Marsala (3)	41,900
Bonnie Lou (2)	150,900	Mary & Jennie (8)	113,800
Brighton (3)	272,700	M. C. Ballard (3)	161,500
California (2)	48,000	Michael G. (8)	122,800
Calm (2)	282,200	Michigan (3)	311,400
Cambridge (3)	300,700	Nancy B. (4)	136,800
Carmela Maria (5)	78,100	Natale III (2)	46,000
Catherine B. (Dr'ger) (3)	163,200	Noreen (1)	76,500
Catherine B. (L. Tr'ler) (8)	58,600	Nova Antonio (9)	42,200
Catherine T. (2)	94,200	Nyanza (1)	10,000
Clipper (2)	155,500	Ohio (3)	235,300
Crest (2)	330,600	Olympia (3)	111,600
Diana C. (3)	63,700	Olympia La Rosa (4)	186,000
Dorchester (3)	277,100	Pam Ann (2)	142,000
Drift (3)	364,400	Phantom (2)	242,200
Eddie & Lulu M. (9)	100,700	Pioneer (8)	118,500
Elizabeth B. (2)	139,600	Plymouth (3)	271,500
Esther M. (2)	206,000	Princess (2)	27,300
Famiglia (3)	55,500	Quincy (3)	317,000
Flying Cloud (3)	373,300	Racer (3)	254,900
4-C-688 (7)	27,000	Red Jacket (2)	280,000
4-G-370 (9)	48,700	Robert & Edwin (8)	105,600
4-G-673 (7)	35,600	Roma (8)	101,600
4-H-823 (9)	56,300	Rosalie D. Morse (2)	148,000
4-R-630 (6)	25,000	Rosie (9)	137,900
Francesca (9)	45,400	Rosie & Gracie (2)	64,000
Ida & Joseph (2)	89,000	Rush (1)	150,600
Iva M. (2)	25,500	Sacred Heart (8)	121,900
J. B. Junior (3)	236,600	San Calogero (8)	118,200
J. B. Jr. II (1)	12,000	Santa Maria (4)	96,100
Jean & Patricia (1)	15,000	Santa Antonino (1)	27,000
Joe D'Ambrosio (9)	96,000	Santa Antonio (2)	61,000
Josephine (5)	49,200	Santa Antonio II (7)	85,200
Josephine F. (L. Tr'ler) (8)	51,500	Santa Rita (8)	50,600
Josephine P. II (4)	122,300	Santa Rosalie (6)	31,600
Josie M. (9)	138,300	Savoia (10)	65,400
Leonarda (9)	105,200	Six Bros. II (3)	10,500
Leonard & Nancy (3)	177,500	St. Anna (7)	49,900
Little Joe (6)	25,500	St. Francis (9)	121,300
Little Nancy (4)	148,000	St. Joseph (2)	47,500
St. Michael (8)	42,100	Wave (3)	440,700
St. Michael Angelo (6)	37,400	Weymouth (2)	146,200
St. Rosalie (1)	30,000	Winchester (3)	283,700
Surge (3)	330,300	Winthrop (3)	303,400
Texas (3)	240,200	Wisconsin (2)	256,500
Thomas Whalen (3)	292,900	Wm. J. O'Brien (1)	84,700
Triton (3)	293,600	Yankee (7)	124,900
Virginia (1)	70,500		

Swordfish Landings (No. of Fish)

Evelyn G. Sears (1)	53

WOODS HOLE

Alva (2)	4,500	Kathy & Dick (4)	6,300
Angeline (5)	11,300	Lera G. (1)	29,900
Annie Louise (3)	14,000	Liberty (1)	4,300
Annie M. Jackson (1)	10,100	Lillian B. (4)	9,500
Automatic (1)	5,400	Little Chief (1)	2,600
Barracuda (2)	6,700	Little Lady (3)	4,700
Bernice (2)	9,400	Madeline (1)	2,400
Bluefin (2)	5,100	Mary A. (3)	7,200
Clara C. (7)	13,000	Mildred & Myra (1)	6,100
Clara T. (2)	2,700	Min Flicka (1)	3,700
Clifton (1)	2,300	Morning Star (2)	6,600
Dolly & David (3)	8,400	Nancy S. (3)	13,000
Dorothy & Everett (1)	900	Nellie (3)	12,800
Driftwood (1)	600	New England (1)	5,500
Eleanore K. (2)	8,500	North Wind (2)	22,200
Eugene H. (2)	81,700	Papoose (4)	17,500
Flavia (4)	8,300	Portugal (1)	6,200
4-B-271 (2)	1,800	Priscilla (3)	3,300
Genevieve D. (5)	10,100	Priscilla V. (2)	44,900
Grayling (3)	5,800	Pvt. Frank Kessler (1)	9,800
Gull (1)	2,300	Ranger (2)	12,400
Harvest (2)	2,800	Roann (2)	63,300
Harvester (1)	1,000	Rose (1)	2,900
Helen Mae (6)	5,800	Santa Treza (2)	7,000
Idlewild II (1)	600	Sonny & Joyce (2)	3,300
Irene (5)	39,100	Stormy Weather (1)	900
Jennie M. (1)	1,600	3 & 1 (4)	9,600
J. Henry Smith (1)	2,800	Three Bells (1)	4,000
Judy Sue (1)	500	Three Pals (1)	4,700

Scallop Landings (Gallons)

B & E (2)	2,250	Mary Canas (1)	1,034
Clinton (2)	875	Petrel (1)	745
Doris Gertrude (1)	1,125	R. W. Griffin, Jr. (3)	3,395
Elizabeth N. (1)	1,120	Smilyn (1)	1,115
Julia K. (1)	515	3 & 1 & 1 (1)	1,025
Maridor (1)	119		

Swordfish Landings (No. of Pounds)

Gertrude D. (1)	5,899

PORTLAND

Agnes & Elizabeth (3)	239,100	Lucy Scola (6)	118,800
Alice M. Doughty (3)	145,000	Marg & Helen (1)	3,300
Althea (2)	106,700	Margaret L. (1)	5,000
Andarte (1)	42,800	Mary & Helen (16)	200,500
Annie Louise (19)	321,100	Mascot (13)	124,600
Araho (1)	90,000	Myrt II (1)	22,900
Ariel (5)	78,000	Natalie B. (1)	800
Belle Isle (3)	120,600	Nora Sawyer (19)	296,600
Bonnie B (5)	31,000	Norland (1)	23,500
Brookline (2)	260,000	Ocean Clipper (4)	219,000
Carmella & Lois (15)	179,000	Onward III (11)	192,000
Carolyn & Priscilla (2)	108,500	Powhatan (3)	163,000
Cecil W. (3)	147,500	Queen of Peace (13)	289,000
Challenger (22)	345,200	Resolute (2)	128,200
Clara Louise (3)	229,300	Richard J. Nunan (1)	24,500
Crescent (21)	598,300	Robbie & Jack (1)	76,700
Daisy T. (1)	7,800	Sea King (3)	154,700
Darling (1)	10,100	Silver Bay (2)	350,000
Elinor & Jean (3)	109,200	St. Michale (14)	170,700
Ethelina (3)	188,600	Theresa R. (2)	173,100
Evzone (2)	67,300	Thomas D. (1)	74,700
Florence & Lucy (1)	117,900	Trinity (8)	151,000
Geraldine & Phyllis (1)	111,000	Vagabond (2)	113,500
Joyce & Evelyn (4)	23,200	Vandal (4)	335,600
Lawson (2)	98,800	Vida E. (18)	304,400
Lilo (1)	10,000	Voyager (3)	148,300

Swordfish Landings (No. of Pounds)

Adele K. (3)	2,544

New Jersey Giant Tuna Run Commences

Giant tuna were beginning to run along New Jersey's 120-mile coastline early in August. Increasing numbers of larger tuna are anticipated as the season progresses. Mid-August usually marks the peak of the giant tuna season, but the fish remain until late in September.

The favorite feeding ground for these king-sized fish, which range between 100 and 600 lbs., is a deep valley extending out into the Atlantic below the Hudson River, known as "The Mudhole". Major giant tuna centers are Atlantic City, Brielle and Belmar.

However, food fishing is also anticipated at a variety of other coastal fishing centers, including the Highlands, Point Pleasant, Avon, Forked River, Beach Haven, Waretown, Barnegat Light, Wildwood, Asbury Park, Cape May and Ocean City.

"Captain Swan" Refloated

The *Captain Swan*, a 45' commercial fishing boat, went aground on a sand bar in Barnegat Inlet July 20, but she was freed the following day by the Manasquan Coast Guard Station's 83' cutter and three rescue boats from the Barnegat Light Station.

Capt. Locker Snow was in command of the *Captain Swan*, which was out of Atlantic City and headed for the Independent Fish Co. dock, Barnegat Light, where a cargo of fish was to be unloaded.

Fined for Taking Short Lobsters

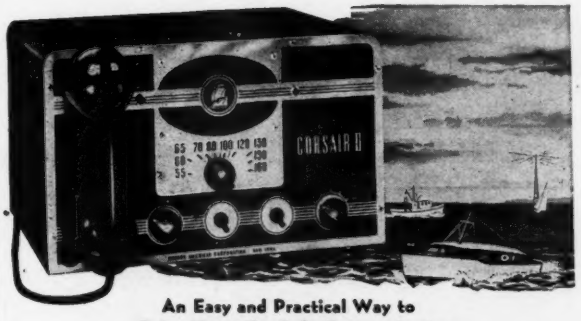
Lobstermen are working against their own interests by illegally taking short lobsters which are worth practically nothing instead of permitting them to grow and become valuable on the legitimate market, according to the State Division of Fish & Game, Trenton.

The Division announced that Game Wardens recently arrested two lobstermen with eight dozen short lobsters, and when hailed into court the lawbreakers were fined $500 each.

Long Beach Island Having Good Season

Long Beach Island is experiencing one of its greatest deep-sea fishing seasons in years. Deep sea anglers recently caught two big white marlins off Beach Haven Inlet. They weighed 41 lbs. and 61 lbs. each, the latter being close to record size for these waters. These marlins, the year's first, are the forerunners of what is expected to be a considerable run of the big fish off the Island. Bluefish also have been showing in deep waters along with a few catches of tuna.

There have been heavy runs of weakfish in the inlets and plenty of fluke of good size in the bay. The crabbing season has been reported by veterans as probably the greatest ever in numbers caught.



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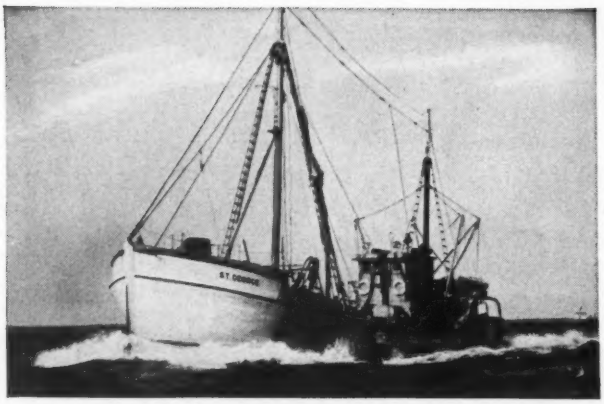

The 114-ft. trawler, "St. George," is powered with a 550 hp. Cooper-Bessemer diesel driving through a 7 in. dia. by 14 foot Monel shaft. She is owned and operated by Captain Coffin.

The St. George brings home the fish

. . . with the help of a Monel shaft

Captain Clyson Coffin, of Tenants Harbor, Me., knew what he was doing when he specified a Monel® shaft for his trawler, "St. George."

And he was sure he was right when he compared the result of tests, required by The American Bureau of Shipping, to the A.B.S. standards for steel propeller shafting in the same size range.

	Monel Shaft of the "St. George"	*ABS Standard for steel shafting*
Ultimate Tensile Strength (test piece pulled to breaking) in lbs. per sq. in.....	89,500	60,000
Yield Point, in lbs. per sq. in..	51,300	30,000
% Elongation over 2" of test piece pulled to breaking.....	49	25

With figures like these, it's no wonder the Monel shafts in trawlers, shrimpers and tuna fleets consistently pay more than their way.

Although Monel is being diverted to defense production, essential industries such as fishing can still get some Monel equipment. But, the supply is limited and it will pay you to place your order with your local boat yard well in advance of the installation date.

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Texas Enjoying Good Night Shrimping

Night shrimping for "brownies" has been good off Port Aransas when weather permits three-day trips for medium-sized trawlers. The *Lawrence S.*, *Sonny M.* and *Billie M.* of the Two Brothers fleet have been making regular trips to the Gulf from the Ingleside processing plant, and have averaged about 2,000 lbs. per boat.

The largest trawler of this fleet, *Mrs. M.*, has been shrimping off the southern tip of Texas and delivering her catch to the Matthews Fish Co. plant at Aransas Pass.

Port Lavaca reported last month that freezing facilities there were filled to capacity. L. E. Ray, manager of Aransas Seafood Co., said the shrimp will now be sent to Harlingen for storage. Veterans in the business expected good hauls of brownies to go on right through the year.

Probably the largest haul of choice pink shrimp ever unloaded in Freeport was brought in on July 24 at the docks of Capt. Carl Muchowich & Sons. A total of 26,000 lbs. was landed by the trawler *Miss Freeport*, Capt. Bob Thompson. The haul was made from Campeche Banks, off the Mexican coast.

More efficient boats, fishing gear, and equipment are largely responsible for increased production of Texas shrimp trawlers. Proper insulation of holding bins for ice and shrimp storage on trawlers has doubled the actual working time spent on the shrimp grounds as well as improved the quality of the shrimp landed at port.

With well-insulated holds on their new trawlers, Capt. Carl Muchowich and Sons of Freeport are now sending shrimpers on regular trips to shrimping grounds off the coast of Yucatan. An average of five to seven trawlers under Capt. Carl's flag are now being used on this haul.

Big Menhaden Season Expected

After passage of a law by the last session of the Texas Legislature permitting the purse seining of menhaden, menhaden companies are rapidly getting production underway. Unfavorable weather hampered fishing operations early in May, but indications point to a successful season. The Quinn Menhaden Fisheries and the Port Arthur Menhaden Products Co. have large and modern plants in the Port Arthur area.

Two Companies Change Hands

Ben Si Collins, who for many years owned and operated the Collins Fish & Oyster Co. at Aransas Pass, has sold his boats and equipment because of poor health and has moved to Corpus Christi.

Bobby Collins, owner of the C & C Co. of Aransas Pass, recently sold his plant and equipment to John Nelson, who has been connected with the Fishermen's Co-op at Aransas Pass. Mr. Nelson expects to open the plant for Fall business. Mr. Collins retained ownership of four trawlers which are now working through the T & T Co.

Seafood Company Moves to Brownsville

Western Shellfish Co. of Aransas Pass, long a producer of seafoods under the management of George Godfrey, has moved its offices and boats to Brownsville. Walter Godfrey, present manager of the company, will direct company interests in the Southwest Gulf area from that location.

Buys Marine Ways

Jack Sanders of Aransas Pass has purchased the marine ways at Corpus Christi formerly operated by the Empire Dock and Boat Co. Extensive repairs have been made to the plant and new equipment has been installed to permit handling of larger boats. The plant will operate under the name of Sanders-Rozzell Dock and Boat Co.

"Silverliner" Burns

A Port Arthur fishing boat, the 135 ft. *Silverliner*, burned to the water's edge in the Gulf of Mexico August 1. None of the crewmen was injured, most of them being some distance away in smaller fishing boats. The vessel was owned by Port Arthur Fisheries.

Rhode Island Menhaden Fishery Opened to Out-of-Staters

Narragansett Bay waters were thrown open to out-of-State menhaden fishermen July 25, when U. S. District Court Judge Edward L. Leahy issued a temporary restraining order barring Rhode Island officials from enforcing restrictive terms of the 1948 menhaden fishing law. The plea for removal of the ban was made in a complaint filed by two Long Island fishermen and the Smith Meal Co. of New York and Massachusetts.

Assistant Attorney General Frances Fazzano agreed to a stipulation by which the State waived a hearing on a preliminary injunction which would have been held before three Federal judges August 1. On the basis of the stipulation, Judge Leahy vacated this hearing and extended the normal 10-day period of the temporary restraining order "until a further court order or until a final hearing on a prayer for a permanent injunction shall be held and an appropriate decree entered."

The plaintiffs planned to operate two seiners owned by the Smith firm under contract to supply menhaden to its fish-meal processing plant at "Promised Land" near Amagansett, Long Island.

However, the New York skippers are going to get some competition—the first in 15 years—from a small native fleet already operating in the Bay. The fleet—a quartet of veteran Point Judith draggers based at Wickford—started hitting pay loads of the menhaden July 26.

The dozen native fishermen docked with about 34,000 lbs. of fish. When they get fully operating they expect to put three of the boats into a shuttle service bringing the fish ashore.

Commenting on the menhaden operations, Capt. William Rice of Wickford said the seine on his boat did not surface enough food fish to make a single meal—a statement the fleet hopes will allay fears of the sports fishermen that menhaden nets are not selective. The 1951 fleet is going to keep a record of any food fish it catches.

First Swordfish Landed

Capt. Carl C. Westcott of the dragger *Ruth W.* caught the first swordfish of the local season in Block Island Sound and got $1 a pound for its 268 pounds dressed weight. The fish weighed 450 pounds when delivered at the Point Judith Fishermen's Cooperative. The comparable wholesale price for the first dressed swordfish last year was 75¢.

Taking of Undersize Quahaugs

Dr. John Glud, marine biologist for the U. S. Fish & Wildlife Service charged with direction of hard and soft-shell clam studies along the Atlantic seaboard, and Dr. Charles J. Fish, director of the Narragansett Marine Laboratory at Saunderstown, claim that taking of undersize quahaugs in Rhode Island is certain to reduce, and eventually eliminate, future supplies. Dr. Glud, presently working in Boothbay Harbor, Me., said the only way to stamp out harvesting of undersize shellfish "is with a very effective warden system."

Rep. Richard D. Windsor said that the recent report of the shipment of undersize shellfish is "one more bit of evidence that enforcement of the shellfish laws should be undertaken by State police."

Edward C. Hayes, Jr., chief of the State Division of Fish & Game, who is charged directly with enforcement of the fish and game laws, said the report of taking of undersized quahaugs in Rhode Island had crystallized a belief held for some time "that these shellfish houses that buy from the fishermen and peddle or ship should be licensed by this Division. A dealer found in violation of the rules and regulations of the Fish & Game Division could face suspension or revocation of his license."

Hayes said it was his intention to continue maintenance of extra heavy marine and shore patrols through the height of the shellfish harvesting season.

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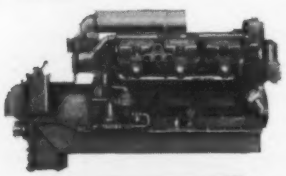

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Diesel Lubrication

(Continued from page 17)

The highest quality fuel is not satisfactory unless it is maintained in a clean, dry condition. Reputable refiners use extreme care to deliver Diesel fuel in this condition to their customers. The fuel must be kept clean and dry throughout the engine system from the fuel tank to the injector nozzle in order to provide top performance. Moisture condensation in fuel tanks aboard ship is often responsible for water accumulation.

Damage from the effect of water or sediment accumulation can be avoided by draining the water from the bottom of the day tanks prior to each day's operation and cleaning the main storage tanks when they are available for general inspection. On those vessels not equipped with day tanks, moisture and any sediment that may have collected should be drained from the bottom of the storage tank frequently.

In order to further limit moisture accumulation in the fuel storage tanks of those small vessels not having day tanks, it is advisable to fill the storage tank to capacity at the end of each day's operation. This reduces the amount of moisture condensation that occurs due to changes in temperature. Extreme caution should be used in filling the fuel tanks to avoid the introduction of any grit, lint, or other contaminants.

Due to the extremely small mechanical clearances of the Diesel engine injectors, even minute quantities of moisture or particles of rust or gritty material may cause injector pump or injector needle valve sticking. To minimize this difficulty, the fuel filters should be properly maintained. The metallic strainer should be drained frequently and occasionally it should be disassembled and washed in clean fuel oil in a clean container. The cotton fibre or cellulose filter element should be changed frequently. This filter removes very fine sediment particles and will eliminate small amounts of moisture. Overextended use of the filter results in decreased fuel flow and loss in performance.

In order to obtain maximum performance from a high-quality, clean, dry Diesel fuel, the injection system must be in proper adjustment. If the exhaust shows smoke under normal load condition, the difficulty probably can be located in the injection system. A needle valve that sticks, plugged injector orifices, or improper timing may be the cause of the difficulty. The injector check valve springs must be adjusted to provide the proper injector valve opening pressures to assure sufficient fuel pressure for good atomization and clean burning. The injection system also should be checked to make certain that the load is distributed evenly between the cylinders.

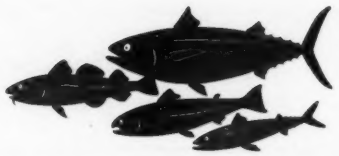
Use of Filters

Engine wear is largely influenced by the condition of the lubricating oil in the engine system. The oil is selected to provide the desirable characteristics necessary for the best operation and maximum life of the engine. Frequent oil and filter changes are necessary to maintain the performance characteristics of the oil. The purpose of the filter is to minimize the recirculation of the solid contaminants in the lubricating oil through the bearings and other points within the engine. These solid contaminants are usually grit, carbon, and metallic particles caused by engine wear.

The continued recirculation of these particles in the lubricating oil accelerates the wear of bearings, piston rings, cylinder liners, and other wearing parts. As these contaminants are removed by the filter, the resistance of flow through the filter increases thereby reducing the amount of oil being filtered per unit of time. Therefore, the filter should be changed at the proper intervals for the specific engine installation and operation.

The filter also will remove a portion of the suspended fuel soot circulated in the lubricating oil. However, when a detergent oil is used, the removal of fuel soot by the filter is not as pronounced as when a non-detergent oil is used. This is due to the dispersant characteristics of the

name these fishes



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detergent oil that maintain the fuel soot in suspension, and as a result, the detergent oils darken more rapidly than the non-detergent type of oil.

Fuller's earth filters should not be used with premium or detergent oils because they remove the additives. The cotton or cellulose fibre lubricating oil filters minimize the solid contaminants in the lubricating oil system as pointed out above; however, they do not remove oil soluble contaminants such as fuel oil and partially oxidized components of fuel and lubricating oil. If permitted to remain in the lubricating oil, these oil soluble contaminants promote the formation of lacquer and varnish, leading to oil ring plugging and ring sticking.

Detergent oils can prevent contaminants from forming deposits, but this does not eliminate the need for frequent oil changes. After a period of operation, the oil becomes so contaminated that the detergent can no longer prevent deposit formation. The only sure way to remove these contaminants and avoid difficulty is by changing oil at sufficiently frequent intervals.

The Engine Overhaul

The general engine overhaul should include a thorough cleaning of the oil cooler to prevent an excessive accumulation of deposits which would result in high oil temperature. The raw water and fresh water systems including the cooler should be thoroughly cleaned at each overhaul. The zinc plugs in the raw water system should be inspected regularly, scraped clean of deposits or replaced if badly disintegrated. The raw water suction screen should be kept clean and the fresh water system protected by the continual use of an inhibitor.

The maintenance program also should provide for servicing the air system of the engine. The metallic intake air screens should be cleaned occasionally by washing in clean fuel oil or solvent, and permitted to dry thoroughly before saturating with fresh engine crankcase oil. Excess oil should be allowed to drain from the air filters before re-installation. The air boxes of two-cycle porting engines should be drained daily if they are not equipped with an automatic drain, and gritty deposits should be wiped from the internal surfaces of the air box frequently. Excessive carbon deposit should be removed from the exhaust system at each general overhaul and excessively rusted or corroded parts replaced.

The Diesel engine represents the most expensive single piece of equipment aboard the fishing vessel. Unless it functions properly, the earning power of the entire vessel is temporarily reduced. High quality fuels and lubricants, assisted by a rigidly enforced maintenance program, help to extend the earning power of the equipment over long operating periods. When it is indicated that engine operation can be improved by using lubricating oil or fuel having different performance characteristics, it is advisable to consult the Technical Service Department of your petroleum refiner.

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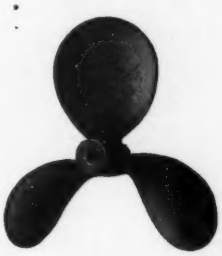

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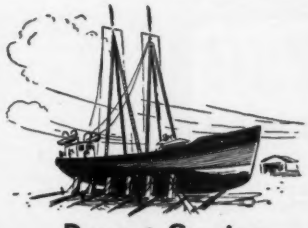

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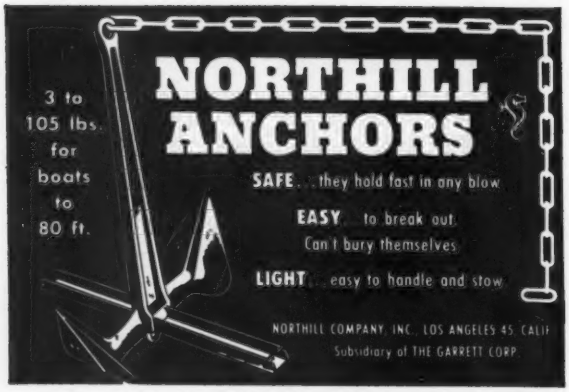
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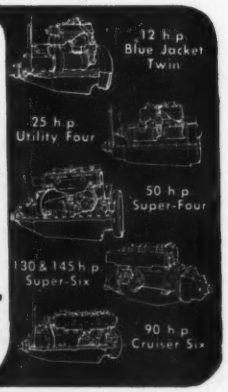

Canadian Report

By C. A. Dixon

June landings in the sea-fisheries of Canada (not including Newfoundland) amounted to 116,524,000 lbs. with a landed value of $7,337,000. These figures are lower by 10.8 and 10.2 p.c. respectively than those for June, 1950.

During the first six months of this year landings and landed values were 528,214,000 lbs. and $24,764,000 as compared with 531,583,000 lbs. and $24,272,000 for the same period of 1950.

On the Atlantic coast returns to the fishermen were lower in both volume and value in New Brunswick and Nova Scotia, and in value in Prince Edward Island. Compared to June, 1950, the catch in Quebec was much greater, the mackerel, cod, salmon and lobster fisheries showing the biggest increases in value.

Two New-Type Draggers in Service

Two new draggers have been added to the New Brunswick fishing fleet and have had successful try-outs. The *Dorothy and Rosalie*, designed by Eldredge-McInnis, Inc. of Boston, Mass., was launched at the shipyard of Connors Bros., Ltd. of Black's Harbor, N. B. This large-type dragger was designed for operation in deep water against heavy tides in the Bay of Fundy.

The *Dorothy and Rosalie* is equipped with a D364, 8 cylinder 225 hp. Caterpillar Diesel with 3:1 reduction gear, and a 5 kw., 32-volt Lister-Blackstone Diesel. She is 70'3" long, 17'6½" wide overall, 8'8" deep, and has a mean draft of 7'8". She has accommodations for a seven-man crew, and a carrying capacity of 80,000 lbs. of iced fish. The fishing equipment consists of a No. 1350 Hathaway winch, with 20" drums carrying 350 fathoms 9/16" towing warps; Sperry Loran; a Kaar radio telephone; and a Bendix depth recorder. She is operated by Capt. Frank Wooster of Grand Manan.

The *Chaleur II* is a smaller and lower-cost dragger. She was built following experiments carried out last Fall in the Gulf of St. Lawrence and Bay Chaleur. She is one of a fleet of 22 "Gloucester" draggers. It was decided to experiment with the smaller type craft which was found feasible to operate in local waters. On her trial run the *Chaleur II* landed 24,000 lbs. of fish in less than three days' fishing, and 56,000 lbs. during the second week. Only three men are required to operate this dragger.

She is 48' long, 13' wide, and has a draft of 5'4". The boat is powered with a 4 cylinder General Motors Diesel, 3:1 reduction gear, with power-takeoff attached, and operates a Hathaway No. 7233 winch. The *Chaleur II* ices from 35,000 to 38,000 lbs. of fresh fish, cruises at 10 knots and can drag in from 60 to 65 fathoms of water. She has been used recently in experimental work in Northumberland Strait. The boat was built by Paulin & Friolet Construction Co. of Caraquet which has launched two similar draggers for the Province of Quebec since the *Chaleur II* took to the water.

The two new draggers were built under the N. B. Fishermen's Loan Board plan. Loans to the fishermen are repayable on 12½ percent gross revenue taken by the owners. In construction the Federal Government at Ottawa grants a subsidy of $165 a gross ton. Boats are built according to specified plans. They are subject to Board of Steamship inspection.

Brit Shows Up

The presence of brit almost everywhere along the coast of Southern New Brunswick and in Maine indicates the approach of a sardine school. It is reported that 100 hogsheads of real sardines were caught at St. Andrews, N. B. in the "Grab All" weir, and fishermen are pinning their hopes on this being a sign that August will supply more and better fish. Very few sardines have been canned on either side of the border in 1951, and it is believed that better prices will be paid for sardines—much better—than in 1950.

Vineyard Bailings

By J. C. Allen

July, up to close to the final hitches, was somewhat disappointing in these latitudes. We dare say that all hands made a living, but not much more than that.

We have reported before that the scup saved the bacon of a bunch of the draggers; they have bailed 'em out a time or two since, but they couldn't last forever, and neither could the demand.

Groundfish, flukes, flounders, cod and the like, which are and have been the main-stay of draggers, have been scattered, and the fluke inshore have run to such small sizes that you could read newsprint through plenty of 'em. Still, prices have been high, and this has helped.

Snapper bluefish have hung on, appearing in all sorts of places, and making things interesting for those who fish for fun. But there has been no promise of anything local that might benefit a commercial fisherman, while the presence of these little devils has been sufficient to drive the mackerel clear.

Our set of trap gear has done better than it did a year ago. The hauls have not been large, but the run has been steady; enough to encourage the owners who have struck tough going for several seasons.

As we sum up the doings at the end of the month, the worst disappointment to date has been the sword. The catch has been slim.

We probably haven't sent any more vessels to sea after them than usual, and it is doubtful if any more than the normal number of small craft have chased them inshore. But the take has not been even fair, and the only consolation has been the price paid. Ninety-one cents at the caplog was paid for the first trip of 25. But it doesn't seem as if this could hold up, with Canadian sword selling for little more than half that price in the big markets.

A peculiar feature, noticeable for the past few years, and particularly this season, is the way that some of the bottom fish scatter. Hand-liners have found it difficult to make a go of things because if they work the tides, and anchor on what seems likely ground, they run out of fish very quickly. Yet the scup are running very large, the sea-bass are larger than a year ago, but both are scattered, and the quickest way to get a hundredweight is to drift all over the cussed ocean.

Our own thought about some of these varieties, including the sword, is that the water is too warm. We have felt this way for several seasons, and we believe it. While we don't know anything about actual temperatures, we have heard men declare that the water in their circulating systems registers 7 or 8 degrees higher this year than ever before, and no trouble can be located in the pumps or piping. And we know that in other years the sword always worked easterly as the weather warmed up. Whatever there may be to this theory of climatic change, it seems to us that it is bound to affect our fisheries.

We have never heard as much dissatisfaction voiced about anything as the latest change in the Massachusetts law which has increased the minimum legal length for lobsters. From various points we have had the same kick delivered—that it is not a conservation measure. The majority of lobstermen are opposed to it because they claim it will drive them out of business.

As for the contention that short lobsters will spawn an extra time if protected up to the present legalized length, our local lads call it hooey, and swear that they never saw a short lobster with eggs. Now comes the South Shore Lobstermen's Association to say, in substance, the same thing. With all due respect to the Powers that Be, we doubt if there are many practical lobstermen in the Massachusetts Legislature, and, in consequence, we can't place any very high value upon the opinions of the majority of our law-makers when it comes to lobsters.

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Companies whose names are starred (*) have display advertisements in this issue; see Index to Advertisers for page numbers

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*Danforth Anchors, 2121 Allston Way, Berkeley, Calif.
*Northill Co., Inc., Los Angeles 45, Calif.

BATTERIES—Storage
"Exide": Electric Storage Battery Co., Allegheny Ave. and 19th St., Philadelphia, Pa.
Surrette Storage Battery Co., Salem, Mass.

BOILERS—Heating & Burners
Elisha Webb & Son Co., 138 S. Front St., Philadelphia 6, Pa.

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*United States Rubber Co., Rockefeller Center, New York, N. Y.

CANS
Continental Can Co., 100 E. 42nd St., New York, N. Y.

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J. F. Carter Co., Beverly, Mass.
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COLD STORAGE
Quaker City Cold Storage Co., Philadelphia. Pa.

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*Sperry Gyroscope Co., Division of the Sperry Corp., Great Neck, N. Y.
*Wilfrid O. White & Sons, Inc., 216 High St., Boston 10, Mass.

CORDAGE
American Manufacturing Co., Noble and West Sts., Brooklyn, N. Y.
*Columbian Rope Co., Auburn, N. Y.
The Edwin H. Fitler Co., Philadelphia 24, Pa.
New Bedford Cordage Co., 131 Court St., New Bedford, Mass.
*Tubbs Cordage Co., San Francisco, Calif.

DEPTH FINDERS
Bendix Aviation Corp., Pacific Div., 475 Fifth Ave., New York 17, N. Y.
*Bludworth Marine, 92 Gold St., New York 7, N. Y.
Kaar Engineering Co., Palo Alto, Calif.
*Submarine Signal Division, Raytheon Manufacturing Co., 138 River St., Waltham 54. Mass.
*Wilfrid O. White & Sons, Inc., 216 High St., Boston 10, Mass.

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*Submarine Signal Division, Raytheon Manufacturing Co., 138 River St., Waltham 54. Mass.

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Caterpillar Tractor Co., Peoria, Ill.
Cooper-Bessemer Corp., Mount Vernon, O.
Cummins Engine Co., Columbus, Ind.
Cummins Diesel Engines of New England, Inc., 18 Hurley St., Cambridge 41, Mass.
Cummins Diesel Sales and Service of New York, Inc., 1030-1044 Leggett Ave., New York 55, N. Y.
Detroit Diesel Engine Division, General Motors Corp., Series 71 Marine Diesel, 13400 W. Outer Drive, Detroit 23, Michigan.
The Edson Corp., 141 Front St., New Bedford, Mass.
Enterprise Engine & Machinery Co., 18th and Florida Sts., San Francisco 10, Calif.
Fairbanks, Morse & Co., Chicago, Ill.
Flagship Engine Co., Lynch Cove, Baltimore 22, Md.
Gray Marine Motor Co., 646 Canton Ave., Detroit, Mich.
*P&H Diesel Engine Division, Harnischfeger Corp., 100 Lake St., Port Washington, Wis.
Kermath Manufacturing Co., 5890 Commonwealth Ave., Detroit 8, Mich.
The Lathrop Engine Co., Mystic, Conn.
Lister-Blackstone Inc., 420 Lexington Ave., New York 17, N. Y.
*Murphy Diesel Co., 5317 West Burnham St., Milwaukee, Wis.
*The National Supply Co., Engine Division, Springfield, Ohio.
*Nordberg Mfg. Co., Lincoln Bldg., 60 East 42nd St., New York 17, N. Y.
The Palmer Bros. Engine Corp., River Road, Cos Cob, Conn.
*H. O. Penn Machinery Co., Inc., East River and 140th St., New York, N. Y.
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D. W. Onan & Sons, Inc., University Ave., S.E., Minneapolis 14, Minn.
*Universal Motor Co., 436 Universal Drive, Oshkosh, Wis.

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*"Pflueger": Enterprise Mfg. Co., 110 Union St., Akron, Ohio.

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*Radiomarine Corp. of America, 75 Varick St., New York 13, N. Y.
*Sperry Gyroscope Co., Division of the Sperry Corp., Great Neck, N. Y.

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*Moodus Net & Twine, Inc., Moodus, Conn.
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G. Walter Machine Co., 84 Cambridge Ave., Jersey City 7, N. J.

Western Gear Works, 2600 E. Imperial Highway, Lynwood, Calif.

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Sudbury Laboratory, Box 780, South Sudbury, Mass.

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Bristol Yacht Bldg. Co., So. Bristol, Me.

Delaware Bay Shipbuilding Co., Inc., Leesburg, N. J.

Diesel Engine Sales Co., Inc., St. Augustine, Fla.

*Liberty Dry Dock, Inc., Foot of Quay St., Brooklyn 22, N. Y.

Muller Boat Works, Inc., East 69th St. and Ave. V., Brooklyn 34, N. Y.

*Frank L. Sample, Jr., Inc., Boothbay Harbor, Me.

*Story Marine Railway, So. Portland, Me.

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Bromfield Mfg. Co., Inc., 246-256 Border St., East Boston 28, Mass.

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Stroudsburg Engine Works, 62 North 3rd St., Stroudsburg, Penn.

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*American Steel & Wire Co., Rockefeller Bldg., 614 Superior Ave., Cleveland 13, Ohio

Bethlehem Steel Co., Bethlehem, Pa.

John A. Roebling's Sons Co., Trenton 2, N. J.

*Wickwire Spencer Steel Division, Palmer, Mass.

Closed Season Needed

(Continued from page 21)

small trout, once they enter the bays they seek shelter in vegetation to protect themselves from predators and tidal action. As they grow they seek out other sheltered areas where they live the first year of their life.

At a year old a general migration is made to the passes and bayous near or leading into the Gulf. Average length of the redfish at this time is about 12 to 13" with some reaching 14", which places them in the market size class.

Areas Recommended for Closure

As a result of the investigation, certain areas have been recommended for closure during a small portion of the year. These are:

Copano Bay—Port Bay from the old causeway to the end of the bay; all of Copano Lake; Turtle Pen Flats and all the east shoreline to the Copano causeway. These sections comprise less than 15% of the total Copano Bay area. It is recommended that Copano Bay in its entirety be closed to net fishing during the period from May 1 to July 31 of each year. This would enable the mature trout to reach the spawning grounds.

St. Charles Bay—from Sharp's Point to and including Cavasso Creek. This area comprises 45% of St. Charles Bay. All of St. Charles Bay should be closed to net fishing during the May 1 to July 31 period.

Redfish Bay—the mouth of Big Bayou for 1½ miles in any direction. This comprises less than 3% of Redfish Bay.

Aransas Bay—North Pass from the S. W. tip of Mud Island running S. E. to the north tip of Lydia Ann Island; Allyn's Byte from the S. W. tip to the N. E. tip of Mud Island or that point known as Blind Pass. These areas comprise less than 5% of Aransas Bay.

Espiritu Santo Bay—all of Pringle Lake; that portion known as Big Pocket; Powderhorn Lake in certain regions; the south shore of Blackberry, Dewberry and Long Island to a distance of 200 yards E. Big Boggy Bayou in its entirety.

These recommendations are considered the absolute minimum of areas to be adhered to in so far as protection of spawning grounds is concerned. They should be closed to all types of fishing from May 1 to July 31 of each year. This means that no bait trawls, no hooks and lines, no nets, no shrimp trawls, nor any other method of taking fish should be used in those areas during that period.

Enough investigation has not been done to allow the researchers to make any biological recommendations concerning the areas of Galveston, Freeport, and the Laguna Madre.

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Record-Holding Wm. J. O'Brien 100% Gargoyle Protected!

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• The 124-ft. WM. J. O'BRIEN, in constant service since 1928, holds all-time Atlantic Coast record for value of fish caught in a single trip. This record-holder and her 5 sister ships, one of America's largest trawler fleets, always have assured top performance and protection under severest operating conditions with Mobilfuel Diesel and Gargoyle Marine Oils. Get this same protection for your fleet. *Insist on Mobil Marine Service.*

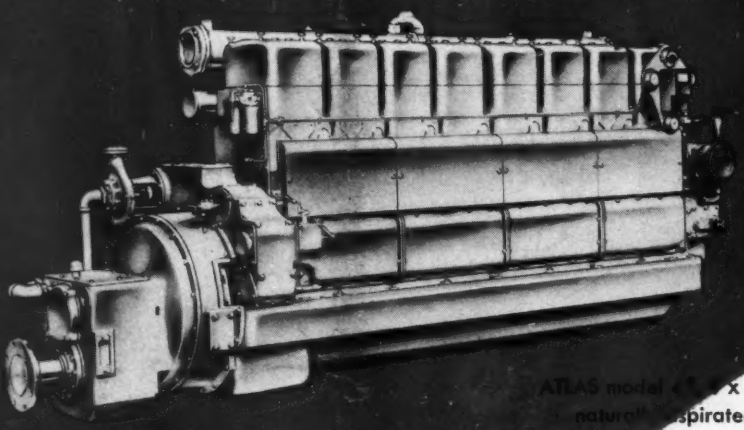
SOCONY-VACUUM OIL COMPANY, INC., and Affiliates:
MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION

FOR TOP PROTECTION — INSIST ON

Mobil Marine Service

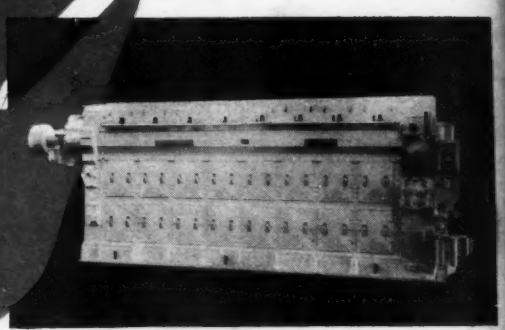
MARINE PRODUCTS
SOCONY VACUUM

For DEPENDABLE SERVICE



ATLAS model 4 ... x 10½, natural... spirated.

Fishing Craft owners use ATLAS and SUPERIOR 4-CYCLE DIESEL ENGINES



SUPERIOR model 80-MX-8, control side.

There's conclusive proof in the performance records of Atlas and Superior Marine Diesel engines that they are built to give dependable service for many years—with extremely low overall operating cost, considering fuel and lubricating oils, maintenance, and availability for service.

Check their design, rugged construction and precision workmanship—the products of experienced engineering, continuous research and modern manufacturing facilities. You will realize why these engines can give you better, more profitable service.

An Atlas or Superior engine is available to fit your requirements. If you want *more power in your present hull,* a reduction-gear model will provide it in the space now occupied by your direct-drive engine.

THE NATIONAL SUPPLY COMPANY

ENGINE DIVISION

Plant and General Sales Office: Springfield, Ohio

Superior ENGINES

ATLAS Imperial DIESEL ENGINES

DIESEL ENGINES
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